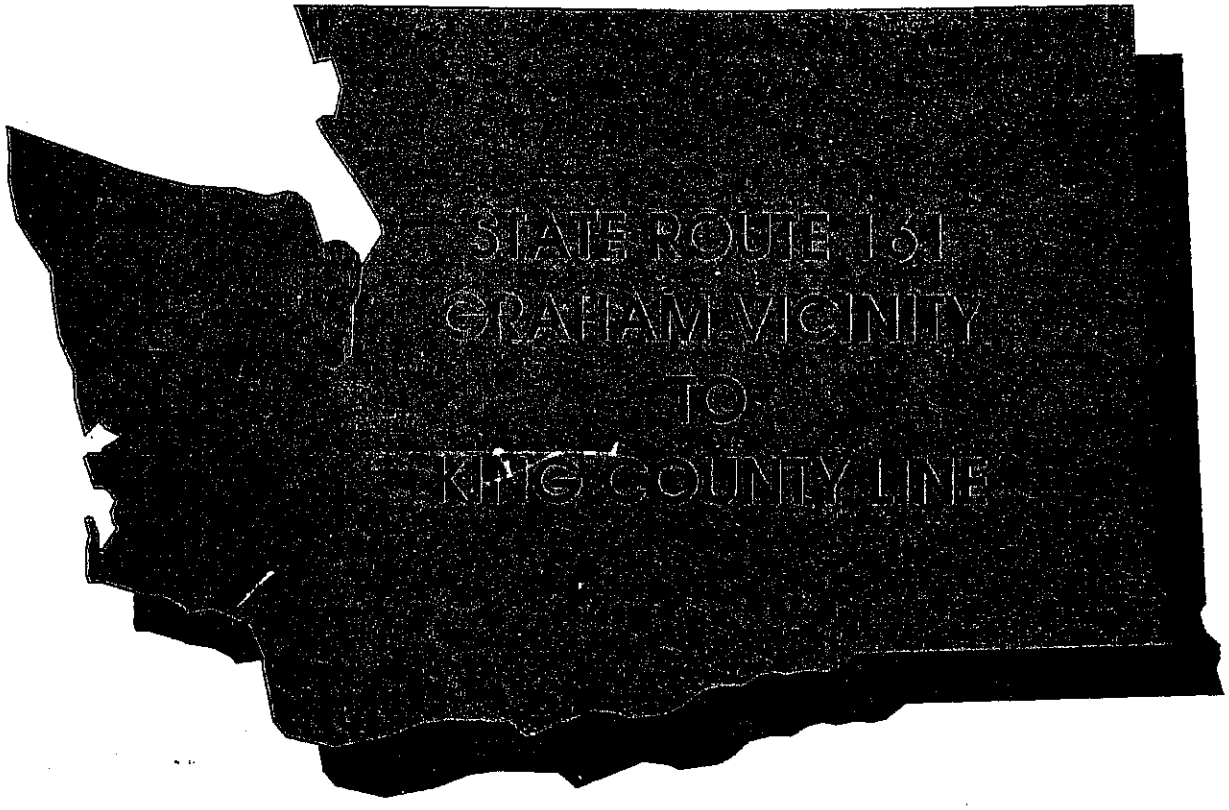
WSDOT Olympic Region

Route Development Plan



Washington State
Department of Transportation

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
OLYMPIC REGION
TUMWATER, WASHINGTON

ROUTE DEVELOPMENT PLAN
STATE ROUTE 161
234TH STREET EAST TO KING COUNTY LINE
MP 17.58 TO MP 32.55

JANUARY 1997

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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
OLYMPIC REGION

ROUTE DEVELOPMENT PLAN

STATE ROUTE 161
234TH STREET EAST TO KING COUNTY LINE
MP 17.58 TO MP 32.55

Approved By:

Region Administrator, Olympic Region — January 2, 1997 — Date

Concurrence:

State Design Engineer, O.S.C. — January 10, 1997 — Date

Concurrence:

Transportation Planning Office Manager, O.S.C. — 1-8-97 — Date

STATE ROUTE 161 ROUTE DEVELOPMENT PLAN
SUMMARY OF RECOMMENDATIONS

ACCESS MANAGEMENT

- This was a major focus point that helped the steering committee develop highway mobility recommendations.
- The RDP introduces the WSDOT Access Management Plan Classifications. Typical Roadway sections are presented that highlight median treatments associated with the Class 2 and 3 designations. Recommendations regarding Median Barrier, Raised Curbed Medians, and TWLTL's are discussed.

HIGHWAY MOBILITY

- Graham Design Project (234th St E to 176th St E)--Widening. Certain details such as median treatments, traffic signals, and channelization will be determined.
- No additional lanes recommended from 176th Street East to Meridian Street.
- SR 512 I/C Vicinity--Provide one additional lane each direction and widen structure.
- SR 167 to King Co Line -- Widening
- Edgewood Design Project (36th St E to the King Co Line) This project will likely provide 2 through lanes each direction with either a center turn lane or other treatment to be determined.

HIGHWAY SAFETY

The following sections have been identified as needing safety improvements. Many of these areas overlap with mobility improvement sections. The recommended capacity improvements, traffic signals, turn channelization, realignment, and other strategies are possible options to improve these areas.

- 244th St E. vicinity to 176th St E. (Design Project from 234th to 176th)
- 176th St E. to 132nd St E.
- Southill Vicinity (Meridian St intersection to SR 512 EB ramps)
- Northill Vicinity (Dechaux Rd. E. to 36th St E.)
- 36th St E. Vic. to 16th / 18th Sts. E. Vic. (Design Project from 36th to County Line)

TRANSIT, PARK AND RIDE LOTS, AND NON MOTORIZED

- Increased transit service is encouraged by WSDOT.
- Facilities for Pedestrians and Bicyclists include the highway shoulder and sidewalk along SR 161.
- The RDP recommends locations in the vicinity of State Route 161 that should be considered as Park and Ride lot or Transit Center sites.

Contents

1.1 Vision Statement

An efficient network of transportation facilities in the Puget Sound Region is vital to moving people and goods. Transportation affects us all--our lives and livelihoods depend a great deal on an efficient transportation system that offers opportunities for various choices and modes of travel. To many extents our transportation facilities have been provided to meet the travel needs, but they were constructed to accommodate a population of the past.

Many citizens are discovering that the Puget Sound Region offers an exceptional environment to live and work. The demands on our state highways have escalated as the population of the region has increased.

In order to assure an efficient transportation system for the future, it is important to plan for the growth that continues to occur. A Route Development Plan (RDP) is conducted to provide solutions to existing and future deficiencies of the transportation system. This RDP discusses specific improvements needed along State Route 161. Some of the recommended improvements in this RDP, such as access management implementation, take a bold new step to assure an adequate operation of State Route 161. These improvements and goals for the future are best achieved through cooperative planning efforts and consensus with affected city and county agencies. This Route Development Plan was prepared in such a way. The State Route 161 Steering Committee members provided many invaluable contributions in the development of this RDP. They shared with the committee their respective agency Comprehensive Plans and transportation goals, policies, and targeted highway improvement projects. Collectively, these Comprehensive Plans and the *WSDOT Highway System Plan* provided the impetus for what is recommended in this Route Development Plan.

1.2 SR 161 Route Development Plan

Study Limits

This RDP outlines a vision for the future development of State Route 161. The study limits of this RDP begin at the 234th Street East intersection in the Graham vicinity and end at the Pierce/King County line near the cities of Edgewood and Milton. The milepost limits are from MP 17.48 to MP 32.55. Beginning at milepost 25.85 and ending at milepost 28.73, SR 161 is coincidental with SR 512 and SR 167. This freeway portion has been excluded from this Route Development Plan.

Stakeholder Involvement

A steering committee was formed to guide transportation decisions and reach a common vision on issues discussed in this RDP. This committee included representatives from city and county agencies, the Puget Sound Regional Council, WSDOT, Office of Urban Mobility, and a transportation interest group known as the Rails to Trails Coalition.

WSDOT conducted two public open houses to present information and solicit comments from the public regarding this RDP. Additionally, a public opinion survey was conducted of 300 residences and all of the businesses within the study limits of the SR 161 corridor. The public involvement process is discussed in greater detail in Section 7 of this route development plan.

Recommendations

The recommendations in this route development plan represent the efforts of many discussions with local agencies and the public. To aid the steering committee in reaching consensus on issues such as mobility, access management, and highway safety improvements, many WSDOT documents, including the current *Highway System Plan, March 1996* and the city and county comprehensive planning documents, were consulted. A discussion of recommended highway improvement strategies is presented in Section 5 of this RDP. Section 8 provides recommended construction time frames and cost estimates for practical projects that would deliver the recommended improvements.

Some of the mobility improvements recommended in this RDP are currently in the Six Year Plan that WSDOT is developing, but funding is only partially secured. Nearly all of the mobility improvements listed for these routes would require additional revenue authority, such as an increased gas tax.

Conclusion

Planning is an ongoing process and must be flexible in order to incorporate unforeseen trends. One of the goals of this plan is to integrate the Department of Transportation's needs with the needs of local transit authorities, cities, counties, regions, tribes, citizen groups, and the traveling public. It is believed that this plan along with a certain amount of flexibility will provide a safe and well integrated transportation system for State Route 161. Specific design level details have not been provided but will need to be developed to meet the changing community needs and funding restraints.

This plan will be updated and modified periodically as jurisdictions along SR 161 complete and update their land use and transportation models and plans, and as other changes occur along the route.

When approved, this long range plan will provide guidance for development of the Olympic Region's program of projects as well as guiding the Region's Development Services Team in defining developer impact mitigation measures. Final approval of the State Route 161 Route Development Plan will be issued by the WSDOT Olympic Region Administrator.

2.1 Highway Location and Route Overview

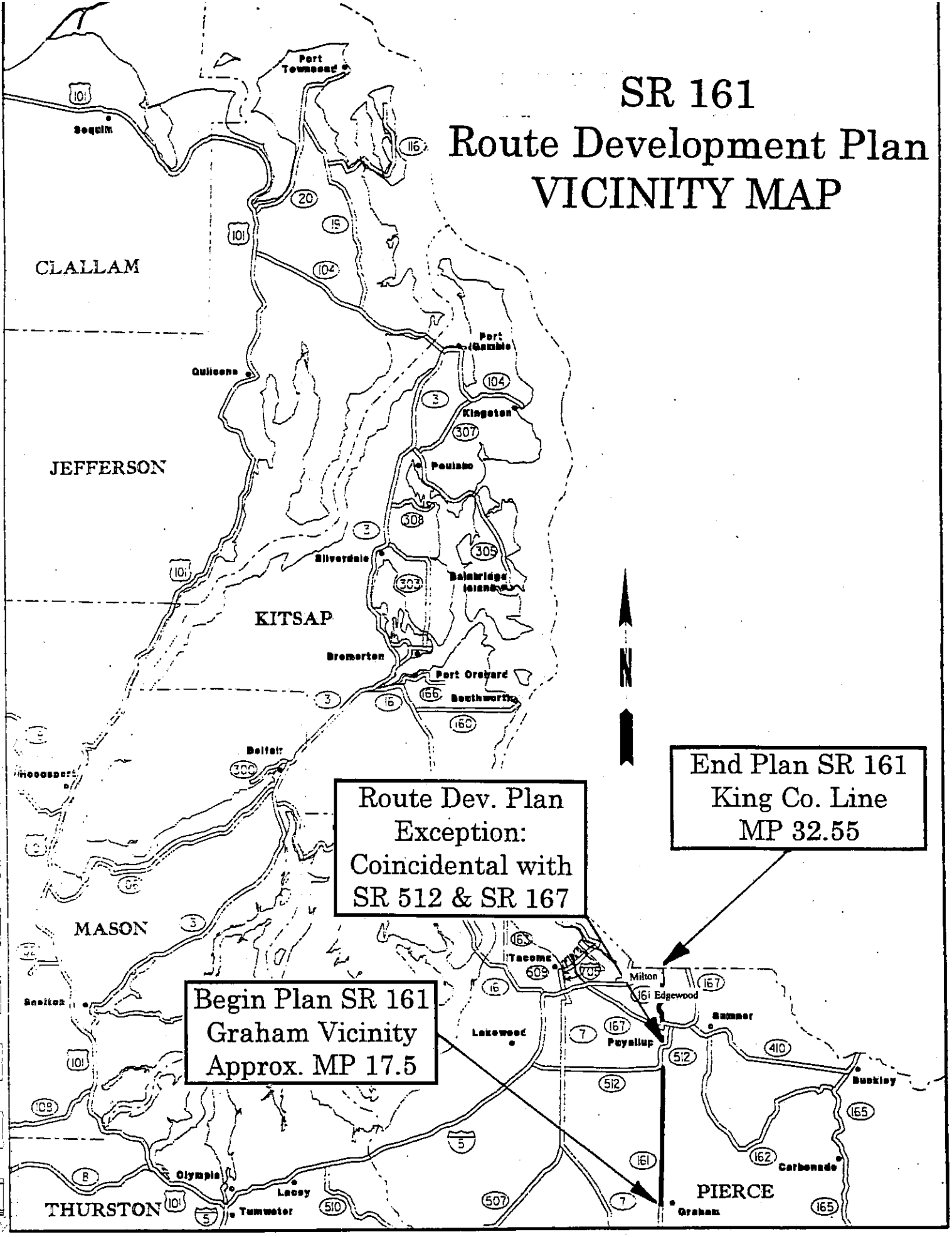
State Route 161 begins in south central Pierce County, southwest of the Town of Eatonville at the junction with State Route 7. At this point of beginning SR 161 is a two-lane rural highway which progresses northeasterly to the Town of Eatonville at milepost 2.30. Leaving Eatonville at milepost 3.63, this two-lane highway continues in a northerly direction through Pierce County to the community of Graham at milepost 17.48. It is at this vicinity that this route development plan begins. Traveling through the community of Graham, SR 161 progresses north through Pierce County as a two-lane facility to the intersection with 176th Street East at milepost 21.36. At this intersection SR 161 becomes a five-lane roadway, providing two through lanes in each direction with a center two-way left-turn lane(TWLTL). This roadway character continues north to the SR 512 Interchange in the City of Puyallup at milepost 25.85. Within this four and one half mile section of SR 161, many access points (via signalized public road intersections and direct road approach connections) have been provided for the high volume of commercial developments. Additionally, near the South Hill Mall south of the SR 512 Interchange, SR 161 is as wide as eight lanes to accommodate the commercial and commuter traffic volumes.

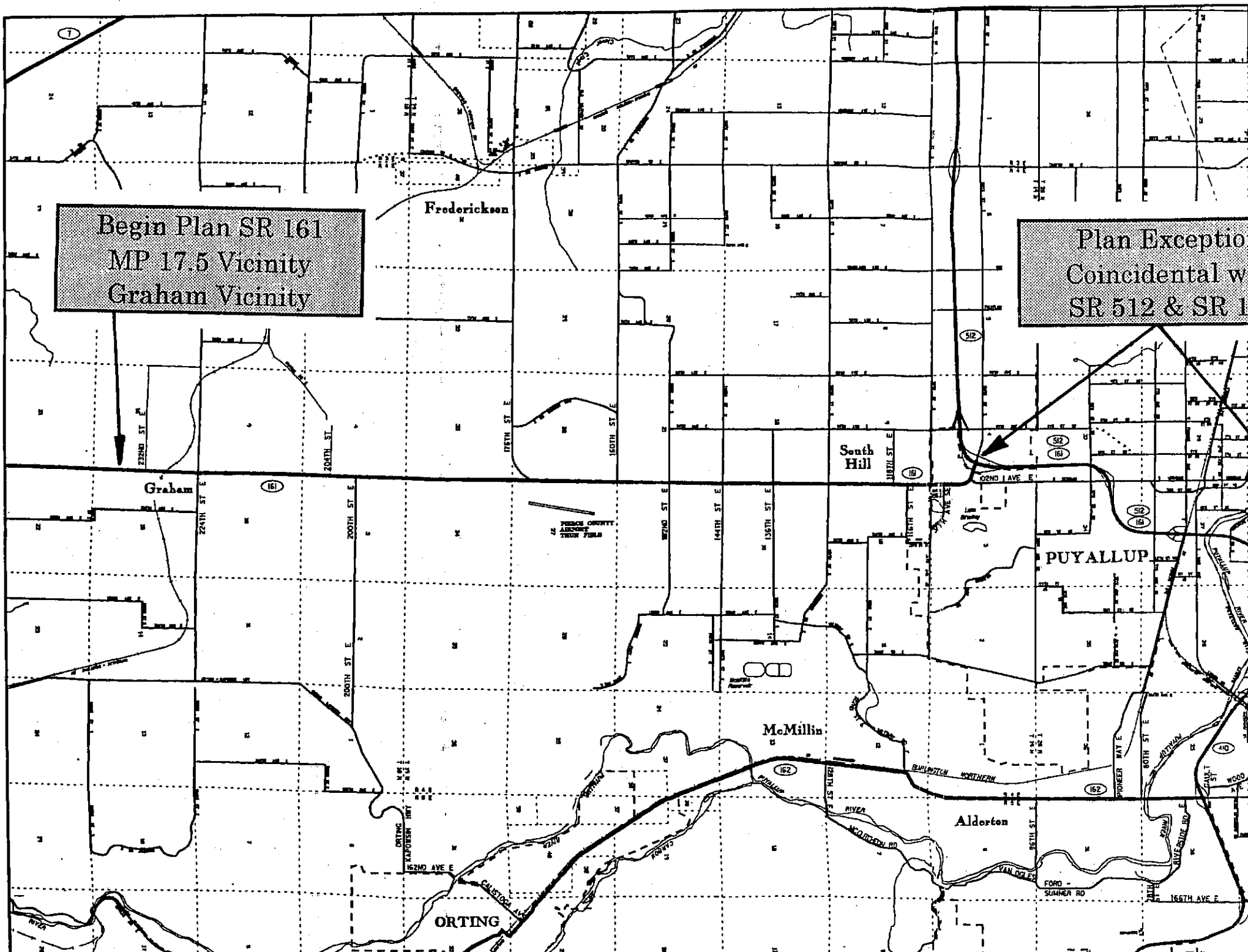
Beginning at the SR 512 Interchange in Puyallup, SR 161 runs coincidental with SR 512 and then with SR 167 into the Puyallup River valley. This means that SR 161 actually uses these existing freeways signed as SR 512 and SR 167 in its northeasterly continuation. Since SR 161 is secondary to these main routes, this coincidental section of SR 161 is not addressed in this route development plan.

At milepost 28.73, in north Puyallup, State Route 161 departs from its coincidental status with State Route 167. It then continues northerly through the Puyallup River valley for a short distance, leaving the City of Puyallup and entering the City of Edgewood at milepost 29.24. Near these city boundaries SR 161 begins an ascent out of the valley through the area known as North Hill. The highway is generally a two-lane facility up to milepost 30.35. However, as SR 161 begins to ascend above the valley floor, a northbound climbing lane has been provided from milepost 29.53 to 30.35. From milepost 30.35, at the intersection with 36th Street East, SR 161 continues northerly as a three-lane facility, providing one through lane each direction and a center TWLTL. The three-lane character continues through the vicinity of the cities of Edgewood and Milton to the vicinity of

the King/Pierce County line at milepost 32.55. At this point this route development plan terminates. The highway continues on into King County, WSDOT Northwest Region, generally as two-lane facility. The highway becomes a multi-lane facility, 3 to 5 lanes, through the City of Federal Way from MP 34.57 to its end at the junction with State Route 18 at MP 35.00.

SR 161
Route Development Plan
VICINITY MAP




Begin Plan SR 161
MP 17.5 Vicinity
Graham Vicinity
Plan Exceptio
Coincidental w
SR 512 & SR 1
Frederickson
Graham
South Hill
PUYALLUP
McMillin
Alderton
ORTING
232ND ST E
224TH ST E
200TH ST E
176TH ST E
160TH ST E
152ND ST E
144TH ST E
136TH ST E
118TH ST E
102ND AVE E
162ND AVE E
166TH AVE E
PIERCE COUNTY AIRPORT THUN FIELD
BURLINGTON NORTHERN
PUYALLUP RIVER
ORTING KAPOWSIN HWY
CALISTOGA AVE
VAN DORES
FORD - SUMMER RD
RIVERSIDE RD
PIONEER WAY E
80TH ST E
86TH ST E
161
162
512
410

2.2 Character of Traffic

State Route 161 is a major traffic corridor for local and regional traffic traveling through central Pierce County and the cities of Puyallup, Milton and Edgewood. There is quite a diverse mix of travelers that use State Route 161. However, the majority of vehicles traveling on SR 161 are commuters. In addition to serving as a commuter route, SR 161 also serves many commercial developments in the cities of Puyallup, Milton, and Edgewood. The route is also used for recreational travel, such as providing indirect connections to destinations like Mount Rainier National Park and the Puyallup Fair Grounds. From Graham to the north, the development growth rate is very high along this corridor. Traffic volumes are anticipated to continue to grow at a steady rate. More highway improvements will be needed as more developments such as shopping centers, service centers, manufacturing, single and multi-family residences and highway-oriented businesses are built in the future.

2.3 The Local Urban Network and Related Facilities

State Route 161 is a major route in the central Pierce County regional network of roads. State Route 161 provides a major north/south connection from as far south as SR 7 near Eatonville, to the Tacoma Urbanized area in the north. This connectivity is vital for efficient and direct transportation into and out of the community of Graham and the cities of Puyallup, Milton, Edgewood, and Federal Way. State Route 7, to the west, is very similar to SR 161 in that it provides a parallel north-south transportation facility through Pierce County. To the east of SR 161 lies SR 162. This route mainly serves traffic traveling in a north-south pattern from the City of Orting to points north such as SR 410 in the City of Sumner. All of these north-south state routes provide connections to points within the above mentioned cities and Pierce County. They also provide connections to other major state routes such as SR 512, SR 167, SR 410, SR 18, and Interstate 5. All of these north-south state routes are experiencing high levels of increased traffic.

The current *Highway System Plan* includes an important regional mobility improvement to State Route 167. This improvement would create a new freeway extension of SR 167 from the Port of Tacoma to Puyallulp. This regional link would improve mobility for vehicles using the current SR 167 along the Puyallup River.

The City of Edgewood greatly supports this freeway extension. Additionally, this project is one of the Olympic Region's top priorities, and the supportive efforts that Edgewood, the Port of Tacoma, and Pierce

County, in particular, have made to bring the project forward will carry significant meaning in upcoming legislative sessions.

There is regional consensus however, that the extension of SR 167 will not solve the long term congestion problems on SR 161, and therefore this RDP recommends WSDOT continue to move forward with the necessary design efforts to SR 161.

In addition to the network of state highways, there are many city and county roads in this region. Other local roadway connections and improvements to existing local arterials are vital to provide travel choices within Pierce County, and to offset the high demand for increased capacity on SR 161. The following is a brief inventory of some of the proposed projects for city and county roads in this region:

- **Shaw Road East** - This proposed project includes improvement to existing facility, new arterial from Pioneer Way E to Main Avenue E, and new arterial corridor from SR 410 to Orting-Kapowsin Highway E. This project is included in the Pierce County Transportation Plan (September, 1992) and classified as premier priority project.

- **Canyon Road East** - This proposed project includes improving the alignment, widening shoulders, and providing turn lanes, channelization and climbing lanes. The project begins at Pioneer Way East and ends at 192nd Street East. This is included in the Pierce County Transportation Plan (September, 1992) and is classified as a medium priority project.

- **94th Avenue East** - This proposed project includes widening from 2 to 4 lanes, widening shoulders, and providing turn lanes. The project begins at 104th Street East and ends at 152nd Street East. A half-diamond interchange has recently been constructed at 94th Avenue and SR 512. In addition, 94th Avenue has been improved between SR 512 and 112th Street East.

- **Cross Base Highway** - This proposed project includes building a new arterial that will connect 176th Street East / SR 7 with Interstate 5. This is included in the Pierce County Transportation Plan (September, 1992) and classified as premier priority project. This will provide a direct route for I-5 south bound vehicles, easing the traffic congestion on SR 161 between 176th Street East and SR 512.

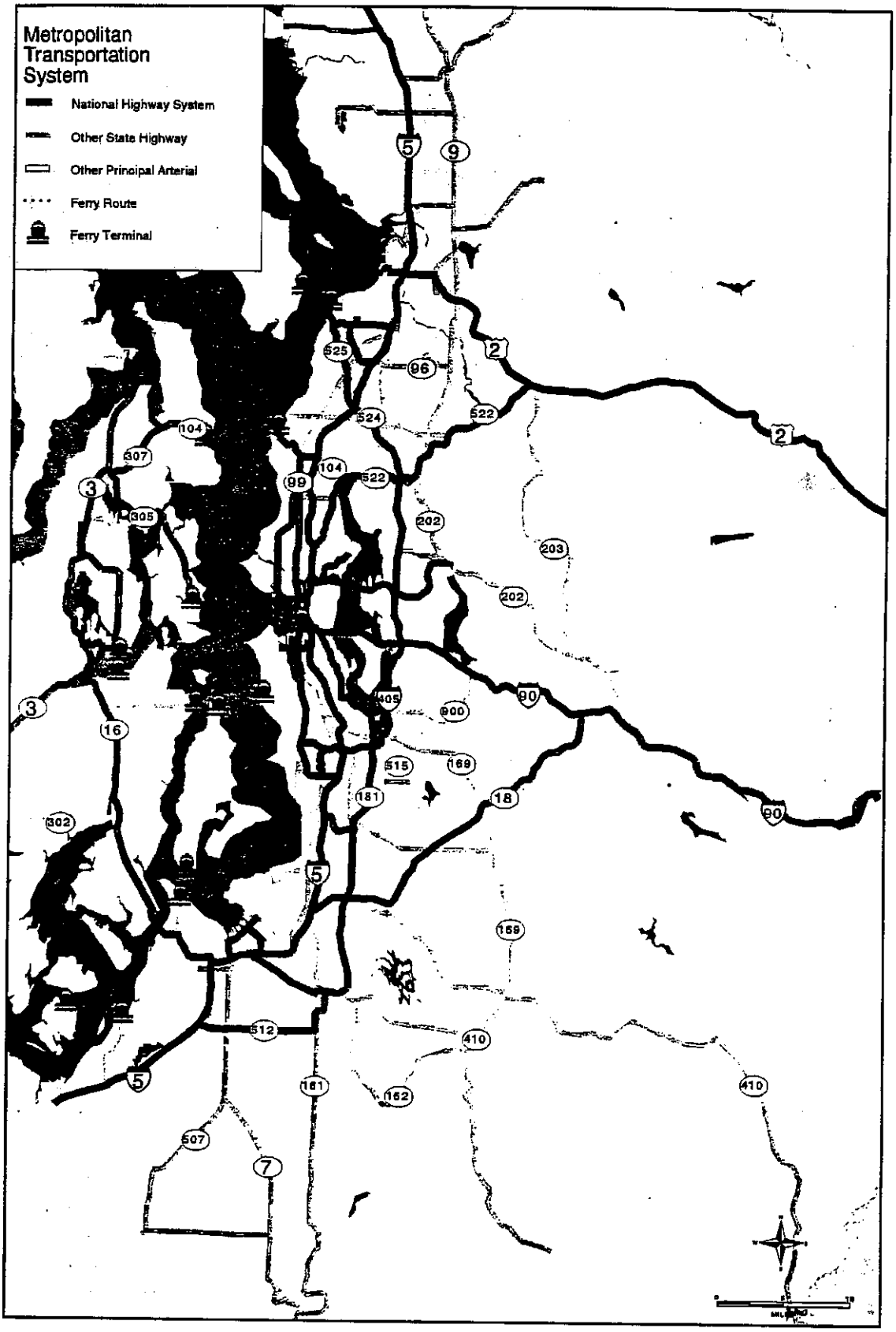
- **86th Avenue East** - It was mentioned in a steering committee meeting that there is an on-going study to improve this arterial. This is currently not in the Pierce County Transportation Plan.

Transit services and Park and Ride lots are discussed in Section 5.

2.4 Metropolitan Transportation System

The map on the following page is taken from the Puget Sound Regional Council's *Metropolitan Transportation Plan*, dated May, 1995. It depicts the significant highways in the region's current Metropolitan Transportation System (MTS). The MTS is comprised of regionally significant infrastructure and services which serve regional transportation functions. It can be seen from the map that SR 161, identified as "Other State Highway", does provide an important link of regional significance. The MTS includes both transportation facilities and services which provide regionally significant travel opportunities to facilitate access to locations and activities crucial to the social and economic health of the central Puget Sound region.

Freeway, Other State Highway, Arterial and Ferry Components – Existing System



Source: Puget Sound Regional Council

2.5 Route Classifications

Federal Functional Class

According to the *Functional Classification of Public Roads National Classifications Map, March 1993*, SR 161 is classified as a Minor and Principal Arterial. Specifically, the route is classified as a Minor Arterial from its beginning at the junction with SR 7 in Eatonville in South Pierce County, to milepost 17.69 near 234th Street East. This Minor Arterial section of SR 161 operates through what is presently identified as "rural area". The route is then classified as a Principal Arterial from milepost 17.69 to its end at MP 35.00, at the junction with State Route 18 in King County. The Principal Arterial classification is due to the change from "rural area" to "Tacoma urbanized area" at MP 17.69.

State Functional Class

In the State Functional Class system, SR 161 is classified as a Rural-Minor Arterial from its beginning to MP 17.69. From MP 17.69 to the end of SR 161, the route is classified as an Urban-Minor Arterial.

This route development plan recommends no change to the functional classifications identified in the *Functional Classification of Public Roads National Classifications Map, March 1993.*

National Highway System Status

SR 161 is not presently included in the National Highway System.

Freight and Goods Transportation System Status

SR 161 is presently identified as a "T2" route in the Statewide Freight and Goods Transportation System, meaning that 5,000,000 to 10,000,000 freight tons are transported over this route annually.

The Washington State Transportation Commission was directed by the 1993 Legislature to identify and designate a freight and goods transportation system (FGTS).

The FGTS was developed in cooperation with cities, counties, and regional transportation organizations. The present system consists of 6,600 miles of state highways, 9,100 miles of county roads, and 900 miles of city streets. Overall, 94 percent of the state highways, 22 percent of county roads, and 8 percent of city streets are on the system. Roads on the FGTS have

designated classifications ranging from "T1" to "T5". Routes with a "T1" designation carry the most annual freight tonnage (over 10,000,000 tons) and "T5" routes carry the least annual tonnage (equivalent to 100,000 tons per year).

While the FGTS is in essence a current inventory, the system is dynamic and periodic reviews and revisions will be needed. The forces of economic growth and change can bring about a need to add or delete routes or to change route tonnage classifications.

Scenic and Recreational Highway System Status

SR 161 is not designated by WSDOT as one of Washington's Scenic and Recreational Highways.

Access Management Plan Classifications and Descriptions

Access management is a technique for protecting the carrying capacity of highways and improving safety. It accomplishes these goals by minimizing disruptions to through traffic by eliminating unnecessary driveways and spacing them apart, managing the roadway median, spacing traffic signals, and managing turning traffic, as well as including other measures. The steering committee members for this Route Development Plan concurred with the present *Access Management Plan (AMP)* classifications and associated typical restrictions. The table below summarizes these classifications within the study limits of this RDP. Following this table, a brief description of each *AMP* Classification is presented as well as typical roadway sections for each classification.

SR 161 WSDOT Access Management Plan
(Graham Vicinity to Pierce/King County Line)

Section Description	Length (miles)	Access Classification	Speed Limit	Land Use
Graham Community - 234th to Eustis Hunt Rd. (MP 17.58 to MP 18.64)	1.06	Class 3	40	Res / Comm
Eustis Hunt Rd to Vic 176th St E (MP 18.64 to MP 21.20)	2.56	Class 2	50	Res / Comm
Vic 176th St E to 112th St E (MP 21.20 to MP 25.28)	4.08	Class 3	35/40/45	Res / Comm
112th St E to Vic 110th St E (MP 25.28 to MP 25.39)	0.11	Class 3	35	Commercial
Puyallup - Vic 110th St E to Meridian St (MP 25.39 to MP 25.66)	0.27	Partial Control	35	Commercial
Puyallup - Meridian St to Jct. SR 512 (MP 25.66 to MP 25.76)	0.10	Full Control	35	N/A

Jct. SR 512 (MP 25.76 to MP 25.85)	0.09	Full Control	35	N/A
SR 161 Coincidental with SR 512 and SR 167 (MP 25.85 to MP 28.73)				
Puyallup - Jct. SR 167 I/C to Vic Valley Ave (MP 28.73 to MP 28.78)	.05	Full Control	35	N/A
Puyallup - Vic Valley Ave Intersection (MP 28.78 to MP 28.81)	0.03	Partial Control	35	Commercial
Puyallup - Vic Valley Ave to Puyallup NCL (MP 28.81 to MP 29.24)	0.43	Class 2	40	Residential
Puyallup NCL to King Co. Line (MP 29.24 to MP 32.55)	3.31	Class 3	40	Residential

Source: *WSDOT Access Management Plan.*

The following is a brief description of the characteristics of the five different access classifications.

CLASS 1 MULTILANE FACILITY

- High speed, high traffic volumes, long trips
- Median barrier typically used
- Planned intersection spacing = 1 mile
- Minimum private connection spacing = 1320 feet
- Private direct access to the state highway shall not be allowed except when the property has no other reasonable access to the general street system.

CLASS 2 MULTILANE FACILITY

- Medium to high speeds, medium to high traffic volumes, medium to long trips
- Median barrier typically used
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 660 feet
- Private direct access to the state highway shall not be allowed except when the property has no other reasonable access to the general street system.

CLASS 3 MULTILANE FACILITY

- Moderate speeds, moderate traffic volumes, short trips
- Balance between land access and mobility
- Median constructed of curbed asphalt or landscaped traffic islands
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 330 feet

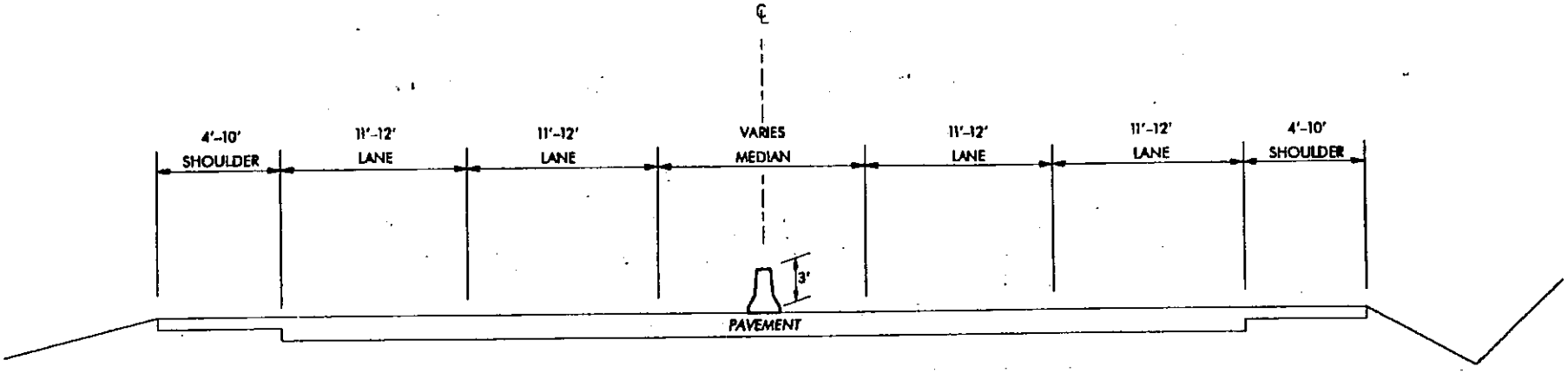
CLASS 4 MULTILANE FACILITY

- Moderate speeds, moderate traffic volumes, short trips
- Balance between land access and mobility
- Two way left turn lane is used
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 250 feet

CLASS 5 MULTILANE FACILITY

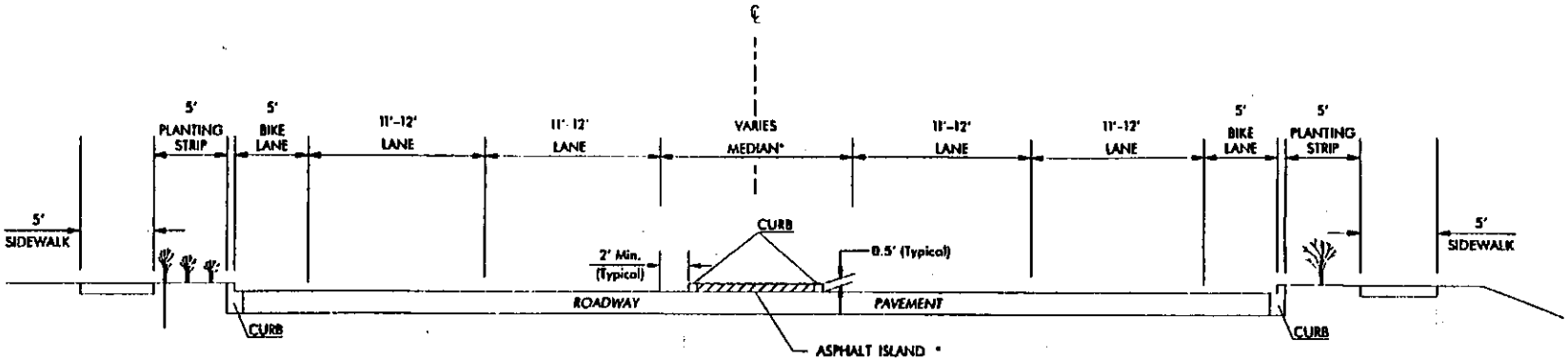
- Low to moderate speeds, moderate to high traffic volumes, short trips
- Highest service to land access
- Planned intersection spacing = 1/4 mile
- Minimum private connection spacing = 125 feet

CLASS 1 & 2 MULTILANE FACILITY



Restricted Median Design Using Concrete Barrier
Preferred on facilities with a posted speed greater than 40 mph

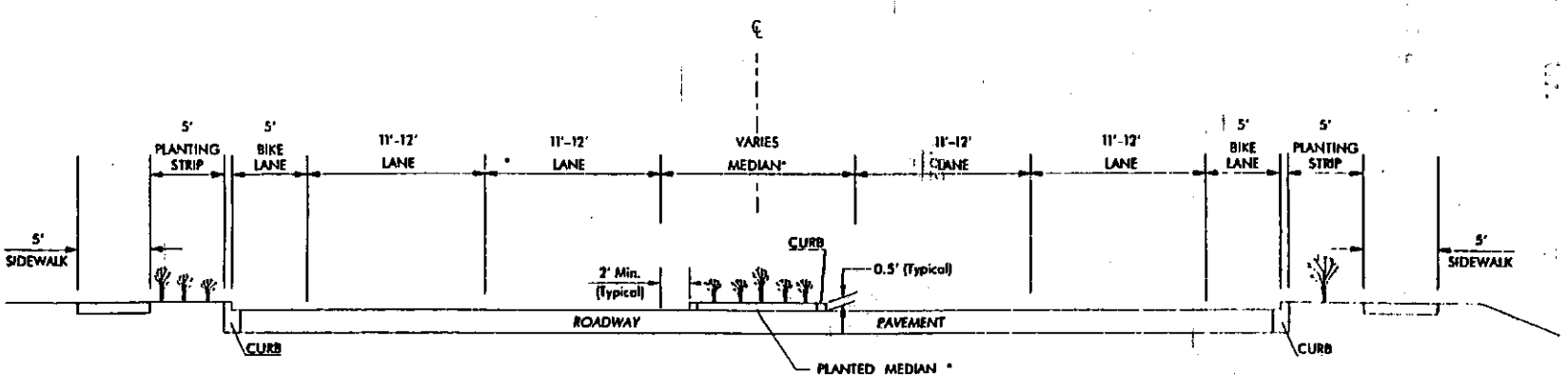
CLASS 3 MULTILANE FACILITY



Restricted Median Design With An Asphalt Island
Preferred on urban area facilities with a posted speed of 40 mph or less

* *Two-way left-turn lane may be utilized where special conditions warrant.*

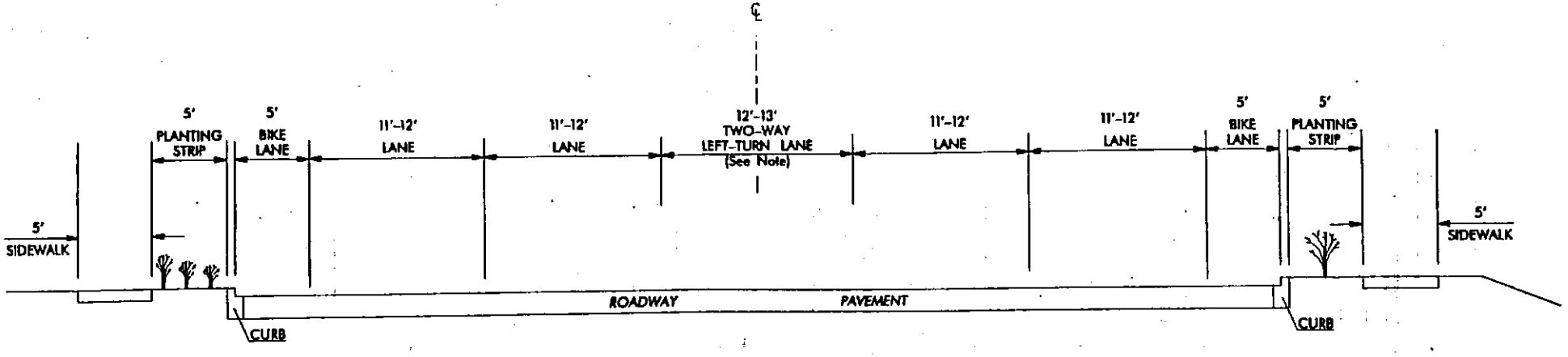
CLASS 3 MULTILANE FACILITY ALTERNATE



Restricted Median Design With A Landscaped Median
Preferred on urban area facilities with a posted speed of 40 mph or less

* *Two-way left-turn lane may be utilized where special conditions warrant.*

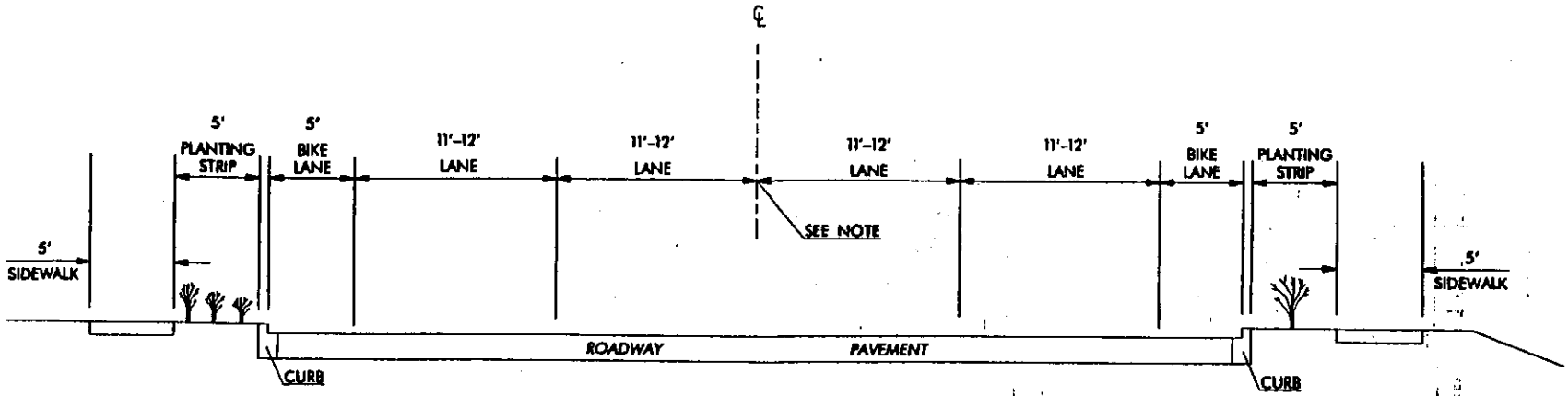
CLASS 4 MULTILANE FACILITY



Two–Way Left–Turn Design
For urban area facilities with a posted speed of 35 mph or less

NOTE: A restrictive median may be used if operational conditions warrant to mitigate turning, weaving, and crossing conflicts.

CLASS 5 MULTILANE FACILITY



For Urban Areas with a posted speed of 35 mph or less

NOTE: A two–way left–turn lane may be used where turning volumes warrant.

3.1 Existing Right-of-Way

SR 161 Existing Right-of-Way
Graham Vicinity to State Route 512 Interchange
MP 17.58 to MP 25.85

Section Description	R/W Left of centerline (feet)	R/W Right of centerline (feet)
234th St E to 224th St E MP 17.58 to MP 18.21	30	**30** to 40
224th St Intersection Vic MP 18.22 Vic.	30 (for 250' on the left at NW corner of 224th St E)	30 (for 400' on the right at NE corner of 224th St E)
224th St E to Eustis Hunt Rd. MP 18.23 Vic. to MP 18.64	75	75
Eustis Hunt Rd. to 176th St E MP 18.64 to MP 21.36	75, 125 (for 1100' on the left at vicinity of land fill MP 21.01)	75, 125 (for 1500' on the right at vicinity of land fill MP 21.01)
176th St E to 152nd St E MP 21.36 to MP 22.73	75	75
152nd St E to 141st St E MP 22.73 to MP 23.38	50	50
141st St E to 132nd St E MP 23.38 to MP 23.98	30 to 50	50 to 60
132nd St E to 128th St E MP 23.98 to MP 24.24	40 to 55	45 to 75
128th St E to 120th St E MP 24.24 to MP 24.73	**30** to 45	**50** to 75
120th St E to 116th St E MP 24.73 to MP 25.00	**30** to 45	55 to **60**
116th St E to 37th Ave. MP 25.00 to MP 25.39	**40** to 45	**40** (varies)
37th Ave. to Meridian St MP 25.39 to MP 25.66	45 to **60**	60
Meridian St to SR 512 MP 25.66 to MP 25.85	60	60 to 150
MP 25.85 to MP 28.73 SR 161 Coincidental With SR 512 & SR 167		

Source: WSDOT ROW Plans
Boldfaced dimension is the width that occurs most frequently in the range.

SR 161 Existing Right-of-Way
State Route 167 to Pierce/King Co. Line
MP 28.73 to MP 32.55

Section Description	R/W Left of centerline (feet)	R/W Right of centerline (feet)
Puyallup River to Vic. Valley Ave. MP 28.73 to MP 28.78	62 at Puyallup River Br. R/W for future interchange 93 &30 before & after Valley Ave.	62 at Puyallup River Br. R/W for future interchange 95 &30 before & after Valley Ave.
Vic. Valley Ave. to 36th St E MP 28.78 to MP 30.35	**30** to 120	**30** to 110
36th St E to 8th St E MP 30.35 to MP 32.09	30	30
8th St E to King Co. line MP 32.09 to MP 32.55	40 to 60	40

Source: WSDOT ROW Plans
Boldfaced dimension is the width that occurs most frequently in the range.

3.2 Existing Surface Geometrics

Information regarding the configuration of existing lanes and shoulders is provided in the following two tables. Descriptions include dimensions of lanes, shoulders, and sidewalks and lane functions such as General Purpose (GP), passing or climbing, Two-way Left-turn Lane (TWLTL), etc. There are no High Occupancy Vehicle (HOV) Lanes established or planned for State Route 161. Milepost locations are used to identify where significant changes occur, such as the number of existing lanes, or where any other significant change in the geometry occurs. The information is presented to represent the conditions along SR 161 in a general sense. For a thorough listing of all geometric conditions, refer to the most current WSDOT *State Highway Log*.

SR 161 Existing Surface Geometrics
MP 17.58 to MP 25.85
Graham Vicinity to State Route 512 Interchange

Section Description	Traffic Lanes (number of, type & dimensions)	Shoulders & Sidewalks (dimensions)
234th St E to 224th St E MP 17.58 to MP 18.21	2 @ 11' through lanes	4' to 8' paved shoulders
224th St E to Eustis Hunt Rd. MP 18.21 Vic. to MP 18.64	2 @ 11' through lanes	8' paved shoulders
Eustis Hunt Rd. to 176th St E MP 18.64 to MP 21.36	2 @ 11' through lanes	8' paved shoulders
176th St E to 152nd St E MP 21.36 to MP 22.73	2 @ 12' through lanes each direction, 1 @ 12' TWLTL	6' paved shoulders
152nd St E to 128th St E MP 22.73 to MP 24.24	2 @ 12' through lanes each direction, 1 @ 12' TWLTL	9' paved shoulders
128th St E to 120th St E MP 24.24 to MP 24.73	2 @ 12' through lanes each direction, 1 @ 11' TWLTL	5.5' sidewalk both sides
120th St E to 116th St E MP 24.73 to MP 25.00	2 @ 12' through lanes each direction, 1 @ 11' TWLTL lane	5.5' sidewalk both sides
116th St E to 37th Ave. MP 25.00 to MP 25.39	2 @ 12' through lanes each direction, 1 @ 11' TWLTL, 1 SB exclusive Rt.-turn between 112th St E & 37th Ave.	sidewalk both sides
37th Ave. to Meridian St MP 25.39 to MP 25.66	2 @ 12' through lanes each direction, 1 Rt.-turn & through shared lane each direction, 1 & 2 Left-turn lanes	partial sidewalks, both sides
Meridian St to SR 512 MP 25.66 to MP 25.85	1 @ 11' through lane each direction, 1 ramp lane each direction	6' paved shoulders

Source: WSDOT *State Highway Log, 1996*

SR 161 Existing Surface Geometrics
MP 28.69 to MP 32.55
State Route 167 to Pierce/King Co. Line

Section Description	Traffic Lanes (number of, type & dimensions)	Shoulders & Sidewalks (dimensions)
Puyallup R. to Vic. Valley Ave. MP 28.69 to MP 28.78	2 through lanes each direction 1 & 2 Left-turn lanes 1 partial NB exclusive Rt.-turn lane	shoulder changes from 10' asphalt to a curb
Vic. Valley Ave. to 36th St E MP 28.78 to MP 30.35	1 through lane each direction 1 partial NB climbing lane	paved shoulders vary from 2' to 8'
36th St E to 8th St E MP 30.35 to MP 32.09	1 @ 11' lane each direction 1 @ 11' TWLTL	4' paved shoulders
8th St E to Pierce/King Co. Line MP 32.09 to MP 32.55	1 @ 11.5' lane each dir. 1 @ 11' TWLTL (partial) 1 @ SB(partial) climbing lane 1-SB(partial) exclusive Rt.-turn lane	paved shoulder varies from 3' to 11'

Source: WSDOT *State Highway Log, 1996*

3.3 Bridge and Structure Inventory

SR 161 Bridge and Structure Inventory
(Graham Vicinity to Pierce/King County Line)

Bridge Number Bridge Name Mile Post	Span Type	Length (feet)	Width (feet)	Year Built	System Plan Description
161/10 SR 512 Overcrossing MP 25.67	PCB	278	40	1971	Seismic-Substr.
161/22 Union Pacific RR Overcrossing MP 29.22	CTB	250	40	1938	Repl.-Struct. Def. Deck Overlay Seismic-Substr.

Source: Data Received from WSDOT Bridge and Structures Office, Bridge Planning and Technology Section, 5/24/95. System Plan Descriptions subject to change.

3.4 Existing Horizontal and Vertical Alignment

Using the data from the TRIPS system, the horizontal and vertical alignments of the subject area of this route development plan were examined. Between MP 17.15 and MP 32.55, the vertical alignment grades range from -8.00% to 6.60%. The minimum and maximum vertical curve lengths used are 100 ft and 1000 ft, respectively. The composite grade analysis portion of the Highway Capacity Manual program was utilized to determine the speed of a typical truck (200 lb/hp) on different segments of SR 161. Based on this analysis, truck speeds have been found to be within acceptable limits of the posted speed throughout the whole section, except for a northbound segment from MP 29.74 to 30.39 where truck speeds could drop 15 mph below the posted speed limit. This situation, however, is rectified by the existing northbound climbing lane from MP 29.53 to 30.43. For the horizontal alignment, the curve radii range from 273 ft to 2865 ft, with the lengths of curves ranging from 231 ft to 941 ft.

Figure 440-1b of the WSDOT Design Manual shows the geometric design data for a principal arterial. For a multi-lane highway, the manual recommends a maximum grade of 5% for a rolling terrain based on the minimum desirable speed of 50 mph.

The radius of a horizontal curve depends on the speed and superelevation rate. Figure 640-13b "Superelevation Rate (6% Max)" of the WSDOT Design Manual recommends minimum radius of 836 feet based on the design speed of 50 mph. This figure may be used for urban conditions without limited access and mountainous areas. The minimum curve radius for a normal crown section is 10,500 feet.

The vertical and horizontal alignments in the subject area are summarized in the following two tables. Non standard sections are shaded.

Vertical Alignment - Existing Grades by Milepost
(Grade is for Northbound vehicles. Reverse the sign for Southbound.)

Approximate Milepost	Approximate Grade
17.15 to 17.52	-8.00%
17.52 to 17.72	-4.00 %
17.72 to 17.97	-1.10 %
17.97 to 18.14	-2.21%
18.14 to 18.27	0.00%
18.27 to 18.41	-1.40%
18.41 to 18.59	-4.60%
18.59 to 19.01	+1.50%
19.01 to 19.40	-0.59%
19.40 to 19.54	-2.10%
19.54 to 19.69	-0.90%
19.69 to 19.83	+3.75%
19.83 to 19.95	0.00%
19.95 to 20.07	-5.69
20.07 to 20.14	0.00%
20.14 to 20.22	+1.82%
20.22 to 20.40	0.00%
20.40 to 20.52	+0.80%
20.52 to 20.64	-2.00%
20.64 to 20.79	-6.03%
20.79 to 20.90	-0.64%
20.90 to 21.07	-3.88%
21.07 to 21.33	+6.00%
21.33 to 21.47	-1.90%
21.47 to 21.62	+1.21%
21.62 to 21.79	+0.15%
21.79 to 21.93	-0.61%
21.93 to 22.16	-0.18%
22.16 to 22.27	-1.64%
22.27 to 22.43	-1.33%
22.43 to 22.68	-0.70%
22.68 to 22.72	0.00%
22.72 to 22.74	+1.00%
22.74 to 22.83	+1.06%
22.83 to 22.96	-2.40%
22.96 to 23.02	-0.91%
23.02 to 23.13	-2.36%
23.13 to 23.26	-2.06%
23.26 to 23.32	-0.15%
23.32 to 23.57	+0.61%
23.57 to 23.70	+2.30%
23.70 to 23.88	-0.20%
23.88 to 24.06	-2.63%
24.06 to 24.14	-2.26%
24.14 to 24.21	0.00%

Source: WSDOT TRIPS System Horizontal and Vertical Alignment Report, 05/16/95
A shaded row indicates that the grade exceeds 5%, the maximum for 50 mph design speed.

Vertical Alignment - Existing Grades by Milepost (cont.)

Approximate Milepost	Approximate Grade
24.21 to 24.25	+5.10%
24.25 to 24.29	+4.19%
24.29 to 24.37	+0.58%
24.37 to 24.46	-2.62%
24.46 to 24.50	-2.28%
24.50 to 24.64	-0.48%
24.64 to 24.71	+2.64%
24.71 to 24.82	+0.66%
24.82 to 24.87	+3.07%
24.87 to 25.00	-2.77%
25.00 to 25.09	-1.70%
25.09 to 25.26	-0.50%
25.26 to 25.41	-0.20%
25.41 to 25.45	-0.52%
25.45 to 25.56	+3.50%
25.56 to 25.85	-0.91%
25.85 to 29.17B	Coincident with SR 512
29.17B to 28.73	Coincident with SR 167
28.73 to 28.83	0.00%
28.83 to 28.84	+0.75%
28.84 to 29.04	-0.02%
29.04 to 29.08	-0.03%
29.08 to 29.23	+4.21%
29.23 to 29.45	-1.47%
29.45 to 29.85	+6.60%
29.85 to 29.93	+6.48%
29.93 to 30.20	+6.08%
30.20 to 30.31	+6.26%
30.31 to 30.38	+5.74%
30.38 to 30.50	0.00%
30.50 to 30.63	+0.70%
30.63 to 30.74	-0.45%
30.74 to 30.90	-2.18%
30.90 to 31.00	+1.06%
31.00 to 31.13	+2.08%
31.13 to 31.22	0.00%
31.22 to 31.30	+1.90%
31.30 to 31.40	-1.10%
31.40 to 31.56	-4.96%
31.56 to 31.94	0.00%
31.94 to 32.06	+2.49%
32.06 to 32.08	+1.48%
32.08 to 32.25	+1.30%
32.25 to 32.45	-0.91%
32.45 to 32.79	-6.00%

Source: WSDOT TRIPS System Horizontal and Vertical Alignment Report, 05/16/95
A shaded row indicates that the grade exceeds 5%, the maximum for 50 mph design speed.

Horizontal Alignment
(Curve direction is for northbound vehicles. Reverse for southbound.)

Approximate Milepost	Tangent or Curve Radius
17.00 to 25.54	tangent
25.54 to 25.70	700' radius curve to left
25.70 to 25.85	tangent
25.85 to 29.17B	Coincident with SR 512
29.17B to 28.73	Coincident with SR 167
28.73 to 29.38	tangent
29.38 to 29.46	441' radius curve to left
29.46 to 29.53	tangent
29.53 to 29.57	1910 radius curve to right
29.57 to 29.64	tangent
29.64 to 29.71	273' radius curve to right
29.71 to 29.81	1146' radius curve to left
29.81 to 29.84	tangent
29.84 to 29.86	573' radius curve to right
29.86 to 29.88	tangent
29.88 to 29.92	382' radius curve to right
29.92 to 29.95	tangent
29.95 to 29.99	287' radius curve to right
29.99 to 30.04	tangent
30.04 to 30.14	302' radius curve to left
30.14 to 30.27	tangent
30.27 to 30.33	1433' radius curve to right
30.33 to 32.41	tangent
32.41 to 32.60	2865' radius curve to left

Source: WSDOT TRIPS System Horizontal and Vertical Alignment Report, 05/16/95
A shaded row indicates that the radius is less than 836 feet, the minimum for 50 mph design speed.

Realignment projects are not proposed to bring the horizontal and vertical alignments up to standards due to physical and financial constraints, except for one area. Section 5 of this report recommends improving the vertical alignment from MP 21.32 to 21.33 which is identified as a RISK section. If sub-standard curves will not be corrected in future improvements, design deviations have to be sought.

3.5 Terrain and Roadside Character

Terrain

According to the *WSDOT State Highway Log, 1996*, within the study limits of this Route Development Plan, SR 161 runs through a rolling terrain. One exception would be the section of SR 161 known as North Hill, from MP 29.45 to 30.38 in the City of Edgewood, which fits the definition of mountainous terrain. A climbing lane has previously been constructed on North Hill, providing two lanes in the northbound direction.

Roadside Character

The roadside encompasses the area between the roadway pavement edge and right-of-way boundaries. Roadside character is a description of the roadside landscape from the roadway user's perspective. The *WSDOT Roadside Classification Plan (RCP)* has been created to coordinate and guide the management of Washington State highway roadsides, including planning, design , construction, and maintenance activities. It is WSDOT policy to put roadside treatments to use for the protection and restoration of roadside character and to incorporate the *RCP* into regional and route specific planning, design, construction, and maintenance programs. The goals of the *RCP* are:

- Promote transportation safety and management efficiency.
- Minimize environmental and social impacts of transportation facility construction and maintenance.
- Facilitate protection and restoration of Washington's natural environment and cultural heritage within state highway roadsides.
- Promote cooperation and communication in roadside management.

The objectives for each goal are found in *WSDOT Roadside Classification Plan.*

The table below shows the roadside classification by segments for SR 161 within the subject of study.

Roadside Classification

Milepost	Character Classification
9.22 to 17.72	RURAL
17.72 to 18.92	SEMIURBAN-Graham
18.92 to 21.52	RURAL
21.52 to 25.82	SEMIURBAN-Puyallup
25.85 to 29.17B	Coincident with SR 512
29.17B to 28.69	Coincident with SR 167
28.69 to 29.22	URBAN-Puyallup
29.22 to 31.72	SEMIURBAN-Puyallup/Edgewood
31.72 to 34.09	SEMIURBAN- Edgewood/Milton

Source: *WSDOT Roadside Classification Plan 1996.*

3.6 Existing Traffic Signals

The following tables provide information relating to existing traffic signals on SR 161, from 224th Street East in Graham to Jovita Blvd. in the City of Edgewood. Traffic Signals are further discussed in Section 5 of this RDP. Refer to Section 5 for proposed signal locations and other relevant solutions.

SR 161 Intersection Inventory Existing Traffic Signal Locations

INTERSECTING STREET NAME	Left Right Both	Mile Post	Distance to next Intersection (miles)	Speed Limit MPH	SIGNALIZATION		
					Existing Yes/No	Distance to next signal	Comments Ownership Coordination
234th St E	R	17.58	0.12	40	No		
232nd St E	L	17.70	0.13	40	No		
229th St E	R	17.83	0.38	40	No		
224th St E	B	18.21	0.43	40	Yes	2.31	Signal owned, maintained, operated by WSDOT.
Eustis Hunt Road/Pierce Co Fairgrounds	B	18.64	0.27	50	No		
213th St E	L	18.91	0.56	50	No		
204th St E	L	19.47	0.25	50	No		
200th St E	R	19.72	0.32	50	No		
Graham Road E	R	20.04	0.04	50	No		
194th St E	B	20.08	0.20	50	No		
191st St E	L	20.28	0.10	50	No		
189th St E	L	20.38	0.14	50	No		
187th St E	B	20.52	0.49	50	Yes	0.84	Emergency Signal owned, maintained, operated by WSDOT.
County Dump Road	R	21.01	0.35	50	No		
176th St E	L (B)	21.36	0.03	45	Yes	0.03	Will be coordinated with Fred Meyer signal. Within 5-6 yrs will be coordinated all the way to SR 512. System
South Hill Fred Meyer	L	21.39	0.33	45	Yes	0.83	Proposed/system pre-emtion
Thun Airport Field Ent/Exit	R	21.72	0.50	45	No		
160th St E	B	22.22	0.12	45	Yes	0.51	Isolated, 160th through 136th should be coordinated. Owned, maintained, operated by WSDOT
158th St E	L	22.34	0.14	45	No		
156th St E	L	22.48	0.25	45	No		
152nd St E	B	22.73	0.18	40	Yes	0.50	Isolated, 160th through 136th should be coordinated. Owned, maintained, operated by WSDOT
149th St E	R	22.91	0.13	40	No		
147th St E	R	23.04	0.19	40	No		

SR 161 Intersection Inventory Existing Traffic Signal Locations

INTERSECTING STREET NAME	Left Right Both	Mile Post	Distance to next Intersection (miles)	Speed Limit MPH	SIGNALIZATION Existing Yes/No	Distance to next signal	Comments Ownership Coordination
144th St E	B	23.23	0.15	40	Yes	0.51	Isolated, 160th through 136th should be coordinated
141st St E	R	23.38	0.36	40	No		
136th St E	B	23.74	0.24	40	Yes	0.50	be coordinated. Will be part of system from 120th to 136th within
132nd St E	R	23.98	0.26	40	No		
128th St E	B	24.24	0.27	35	Yes	0.49	owned,maintained,operated by DOT
123rd Ct E	R	24.51	0.09	35	No		
122nd St E	B	24.60	0.13	35	No		
120th St E	R	24.73	0.14	35	Yes	0.27	owned,maintained,operated by D T System
118th St E / Shopping Center	B	24.87	0.13	35	No		
116th St E	B	25.00	0.25	35	Yes	0.25	System. Owned, maintained, operated by WSDOT.
112th St E / Shopping Center	B	25.25	0.12	35	Yes	0.12	System. Owned, maintained, operated by WSDOT.
37th Ave SE	B	25.37	0.13	35	Yes	0.13	System. Owned, maintained, operated by WSDOT.
35th Ave SE	B	25.50	0.16	35	Yes	0.16	System. Owned, maintained, operated by WSDOT.
Meridian St	R	25.66	0.10	35	Yes	0.10	System. Owned, maintained, operated by WSDOT.
SR 512 EB Ramps	B	25.76		35	Yes		System. Owned, maintained, operated by WSDOT.
SR 512 WB Ramps	R			35	Yes		System. Owned, maintained, operated by WSDOT.

SR 161 Intersection Inventory Existing Traffic Signal Locations

INTERSECTING STREET NAME	Left Right Both	Mile Post	Distance to next Intersection (miles)	Speed Limit MPH	SIGNALIZATION Existing Yes/No	Distance to next signal	Comments Ownership Coordination
SR 167 EB On-ramp/North Levee Road	B	28.70	0.03	35	Yes	0.03	Proposed System. The WB off-ramp will be re-aligned so that it intersects SR 161 at the existing I/S for EB on ramp/North Levee Road.
SR 167 WB Off-ramp	R	28.73	0.07	35	Yes	0.07	System. Owned, maintained, operated by WSDOT. This signal will be removed and , ramp termini blocked off
Valley Ave.	B	28.80	0.26	35	Yes	1.55	System. Owned, maintained, operated by WSDOT.
Spencer Rd NE	R	29.06	0.43	40	No		
Dechaux Rd E	R	29.49	0.58	40	No		
102nd Ave E	R	30.07	0.28	40	No		
36th St E	B	30.35	0.24	40	Yes	0.73	Isolated Signal. Proposed System. Owned, maintained, operated by WSDOT.
32nd St E	B	30.59	0.19	40	No		
29th St E	R	30.78	0.30	40	No		
24th St E	B	31.08	0.34	40	Yes	1.01	Isolated Signal. Proposed System. Owned, maintained, operated by WSDOT.
18th St Ct E	L	31.42	0.16	40	No		
16th St E	B	31.58	0.16	40	No		
13th St Ct E/Sunrise Lake Village	B	31.74	0.35	40	No		
8th St E	B	32.09	0.04	40	Yes	>0.04	System
Jovita Blvd/Shopping Center	B	32.13	unknown	40	Yes	unknown	System

4.1 Traffic Data Collection and Analysis

The traffic volumes used for this study were taken from the actual counts gathered by the WSDOT Olympic Region's Traffic Office in 1994 and 1995 and the traffic report of WSDOT TRIPS System. These values represent a "snapshot in time" of traffic data, used in this study to determine existing and future volumes. The average daily traffic (ADT) on highway segments and the peak hour turning movement volumes at intersections were analyzed. The ADT is the volume of traffic passing a point or segment of a highway, in both directions, during a period of time, divided by the number of days in the period and factored to represent an estimate of traffic volume for an average day of the year.

The *Highway Capacity Manual software* was utilized to analyze traffic operations of highway segments and unsignalized intersections. In addition, the *SYNCHRO Traffic Signal Timing* software was utilized to analyze traffic operations of signalized intersections. In the analysis of highway segments, the traffic volume needed is the design hour volume (DHV) which is calculated by multiplying the ADT by the percentage of ADT occurring in the peak hour (K). The K values are taken from the System Plan which utilizes the data furnished by the WSDOT Traffic Data Office at Olympia Service Center. The values for the percentage of peak hour traffic in the heaviest direction of flow (D) and the truck percentage (T) were taken from actual counts.

The 1996 average daily traffic ranges from as low as 9,096 to as high as 44,545. Truck traffic percentage ranges from 1% to 11%. The highest ADT of 44,545 exists north of the intersection at 37th Avenue SE in Puyallup containing about 3% of truck traffic. The lowest ADT of 9,096 occurs south of the intersection at 224th Street E in Graham with a truck percentage of 8.4%. The highest truck percentage of 11% occurs between County Dump Road and 176th Street E in Graham with an ADT of 24,035. The lowest truck percentage of 1% occurs between the intersection at Spencer Road NE and Puyallup northern city limits. The K values range from 7% to 10%, and the D values range from 53.30% to 67.66%.

The annual traffic growth rates generated by *EMME2 Traffic Model* were provided by Pierce County Public Works and Utilities. The growth rates range from 0.88% to 5.80%. These growth rates were utilized to project the traffic volumes to the design year 2016 by annual compounding. The *EMME2 Traffic Model* is also an evolving source of information that changes with time. Growth rates used from the model represent a "snapshot

in time" taken during the RDP preparation period and are consistent with Pierce County's comprehensive plans at the time of this report.

4.2 Present Operating Conditions

The highway capacity segment analyses of the PM peak period show that existing traffic conditions on SR 161 generally operate with a level of service E. The segment analysis was not utilized to analyze capacity through Puyallup. The methodology will not yield accurate results because of the existence of closely spaced signalized intersections and the lower posted speed limits through this section. The levels of service are controlled by the traffic operations at the signalized intersections.

The traffic operations at fifteen signalized intersections were analyzed. Some signalized intersections are not included in the analysis because the traffic counts are not available during the period of this study. Most of the signalized intersections that were analyzed presently operate at poor levels of service. Eight signalized intersections operate with a level of service in the E to F range during the PM peak period. The following table summarizes the signalized intersection LOS.

SR 161 Existing Signalized Intersection Levels of Service
(PM Peak Period)
Graham to Pierce/King County Line

MP	INTERSECTION AT SR 161	1996 LOS
18.21	224th St E	D
21.36	176th St E	E
22.22	160th St E	D
22.73	152nd St E	F
23.23	144th St E	C
23.74	136th St E	B
24.24	128th St E	F
24.73	120th St E	D
25.00	116th St E	E
25.25	112th St E	E
25.37	37th St E	D
25.50	35th St E	F
25.66	104th St E (S Meridian)	C
30.35	36th St E	B
31.08	24th St E	E
32.09	8th St E	F
32.13	Jovita Blvd	D

A traffic analysis was also conducted for ten unsignalized intersections that have high turning movement volumes and are known to cause some delays to vehicles making turns to SR 161. The traffic conditions on the minor legs of four intersections operate with a level of service in the E to F region. The following table summarizes the unsignalized intersection levels of service.

SR 161 Existing Unsignalized Intersection Levels of Service
(PM Peak Period)
Graham to Pierce/King County Line

MP	INTERSECTION AT SR 161	1996 LOS							
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL
18.64	Eustis Hunt Rd			B	C		C	B	A
18.91	213th St E	C		C				B	
19.47	204th St E	C		C				B	
19.72	200th St E				F		F		B
20.08	194th St E	F	F	F	B		B	B	A
30.59	32nd St E	D		D	D	D	D	B	A
30.78	29th St E				C		C	B	A
31.42	18th St E	C		C				B	
31.58	16th St E	E	E	E	D	D	D	B	A
31.74	13th St E	F	F	F	C		C	B	A

4.3 Future Operating Conditions

Without any improvements to the existing facility, the traffic conditions on SR 161 are expected to operate at level of service F. The Mobility Subprogram of the WSDOT *State Highway System Plan* states:

> *Mitigate congestion on urban highways in cooperation with local and regional jurisdictions when the peak period level of service falls below Level of Service D.*
> *Provide uncongested conditions (Level of Service C) on rural highways.*

The future traffic operations at the intersections have not been analyzed at this time. However, without any improvements, the traffic operations of the signalized intersections are predicted to deteriorate to level of service F by year 2016.

Several highway improvements and access management measures on SR 161 are proposed to mitigate the existing and future mobility and safety

deficiencies. Detailed descriptions of the improvement proposals are discussed in Section 5 of this report. The improvement proposals are expected to alleviate the traffic operations on SR 161 through Graham and between SR 167 interchange and 36th Street to acceptable levels of service.

Through Puyallup and Edgewood, the effects of the improvement proposals to the traffic operations at the signalized intersections have not been determined at this time. However, these proposals, together with the improvements to the local transportation network that may occur in the future within these two cities, will improve the mobility and safety of the traveling public.

SR 161 Highway Segment Analysis Levels of Service
(PM Peak Period)
Graham to Pierce/King County Line

BEG MP	DESCRIPTION	END MP	1996 ADT	2016 ADT	1996 LOS	2016 LOS W/O IMPR.	2016 LOS With IMPR.
17.58	234th St E to 224th St E	18.21	9096	13516	C/D	F	A
18.21	224th St E to Eustis Hunt Rd	18.64	18618	27665	E	F	B
18.64	Eustis Hunt Rd to 213th St E	18.91	18017	26772	E	F	B
18.91	213th St E to 204th St E	19.47	17967	26698	E	F	B
19.47	204th St E to 200th St E	19.72	18191	27031	E	F	B
19.72	200th St E to 194th St E	20.08	21856	32477	E	F	B
20.08	194th St E to County Dump Rd	21.01	22260	33077	E/F	F	B
21.01	County Dump Rd to 176th St E	21.36	24035	35715	E/F	F	B
21.36	176th St E to 152nd St E	22.73	25345	37661	*	*	*
22.73	152nd St E to 136th St E	23.74	24645	36621	*	*	*
23.74	136th St E to 120th St E	24.73	39682	48420	*	*	*
24.73	120th St E to SR 512	25.85	44545	54353	*	*	*
28.80	SR167 I/C Vic. to 36th St E/ Chrisella Rd	30.35	14614	17832	E	E	B
30.35	36th St E to 24th St E	31.08	18153	22150	E	F	*
31.08	24th St E to 8th St E/Milton Way	32.10	18605	22702	E	F	*
32.10	8th St E to County Line	32.55	19131	23343	E	E	*

* *The operational levels of service of signalized intersections prevail through this section. Refer to Section 5 of this RDP for improvement project descriptions.*

4.4 Land Use and Zoning

The need for land use planning and regulation increases as the demand for housing, streets, commercial facilities, and public facilities grow. Limitations are placed on the use of a land to minimize negative impacts to neighboring properties. Zoning regulates the locations of land uses. It is a means of assuring that land uses are compatible to one another. It allows for control of densities in each zoning category, with the purpose of providing adequate facilities for such categories. Zoning ordinances are established to prescribe setbacks and minimum lot sizes and provide techniques to preserve and protect environmentally sensitive areas. The land use plan is a basic part of the comprehensive plan which is an official statement of the county or city policy establishing the direction it will follow as it develops and changes.

The proposed land use zonings for adjacent areas along SR 161 from MP 16.00 to MP 32.55 are shown in the tables below. Fourteen land use zonings are proposed along this section of SR 161. The sources of information used are Pierce County Generalized Proposed Land Use Plan adopted on November 29, 1994, the City of Puyallup Comprehensive Plan of 1994, and the City of Milton Comprehensive Plan of 1994. The City of Edgewood is currently developing its own comprehensive plan. The City of Edgewood has for the past six months been involved in the process of revising their interim zoning, and when their work is completed the related findings can be incorporated into Local Comprehensive Plans, Regional Transportation Plans and models, future updates of the State Highway Systems Plan, and future updates of the SR 161 RDP.

The first table shows the summary of how much of an area is zoned for each land use. The second illustrates how the zoning varies as we go along SR 161, showing the location by mile post and the width. The width is included to determine acreage and defined here as the measurement of the side perpendicular to the highway. A maximum width of one mile is used for area calculation when the side extends too far from the highway. In terms of length and area, rural-related use ranks first with 10.15 miles totaled along both sides of the highway and about 4540 acres of land. Commercial and business use comes in second in this category, followed by residential use.

Knowing adjacent land use zonings along SR 161, traffic generated by expected developments can be predicted. Land use zonings are taken into consideration when performing traffic modeling. The growth rates resulting from the EMME2 Traffic Model performed by Pierce County Public Works and Utilities reflect the proposed land use.

SR 161 MP 16.00 to MP 32.55
Summary of Proposed Land Use

Land Use	Length Along SR 161 (miles)		Adjacent Zone Area (acres)		Total Area (acres)
	Left Side	Right Side	Left Side	Right Side	
High Intensity Employment Center	1.72	1.98	277.21	953.16	1230.37
Commercial/Business	0.79		395.64		395.64
Auto Oriented Commercial	1.12	1.12	281.61	297.97	579.58
Light Manufacturing	0.63		87.27		87.27
Mixed Used District	1.42	2.87	144.24	708.59	852.83
High Urban Density Residential	0.50	0.50	78.79	36.36	115.15
Low Urban Density Residential	0.51		326.40		326.40
Low Urban Density Residential/Limited Commercial		0.51		326.40	326.40
Moderate Density Single Family	1.35	0.50	864.00	320.00	1184.00
Rural Activity Center	2.35	2.35	493.75	543.68	1037.43
Reserve	0.10	0.59	64.00	377.60	441.60
Rural Separator	0.88	0.95	563.20	608.00	1171.20
Rural 5	1.81	0.49	1158.40	313.60	1472.00
Rural 10		1.32		844.80	844.80

SR 161 MP 16.00 to 32.55, Generalized Proposed Land Use

Mile Post	Location Description	Proposed Land Use		Width of Land Parcel (Perpendicular to Highway)	
		Left	Right	Left	Right
MP 16.00 to 17.32	MP 16.00 to 238th St. E	Rural 5	Rural 10	*	*
MP 17.32 to 18.21	238th St. E to 224th St. E	Rural Activity Center	Rural Activity Center	800' to1400'	800' to1400'
MP 18.21 to 18.64	224th St. E to Eustis Hunt Rd.	Rural Activity Center	Rural Activity Center	*	*
MP 18.64 to 19.13	Eustis Hunt Rd. to MP 19.13 Vic.	Rural 5	Rural 5	*	*
MP 19.13 to 19,23	MP 19.13 to 19.23 Vic.	Reserve	Reserve	*	*
MP 19.23 to 19.72	MP 19.23 Vic. to 200th St. E	Moderate Density Single Family	Reserve	*	*
MP 19.72 to 20.08	200th St. E to 194th St. E	Moderate Density Single Family	Mixed Use District	*	1400'
MP 20.08 to 20.50	194th St. E to 187th St. E	Mixed Use District	Mixed Use District	1400'	1400'
MP 20.50 to 21.01	187th St. E to Co. Dump Rd.	High Intensity Employment Center	High Intensity Employment Center	1400'	200'
MP 21.01 to 22.22	Co Dump Rd. to 160th St. E	High Intensity Employment Center	High Intensity Employment Center	1400' to 1200'	5280'
MP 22.22 to 22.48	160th St. E to 156th St. E	Mixed Use District	High Intensity Employment Center	1200' to 400'	5280'
MP 22.48 to 22.73	156th St. E to 152nd St. E.	Mixed Use District	Mixed Use District	400'	400'
MP 22.73 to 23.23	152nd St. E Vic. to 144th St. E	Moderate Density Single Family	Moderate Density Single Family	*	*
MP 23.23 to 23.74	144th St. E to 136th St. E	Low Urban Density Residential (4-8 units/acre)	Low Urban Density Residential/Limited Commercial	*	*
MP 23.74 to 24.24	136th St. E to 128th St. E	High Urban Density Residential (15-22 units/acre)	High Urban Density Residential (15-22 units/acre)	1300'	600'
MP 24.24 to 24.73	128th St. E 120th St. E	Mixed Use District	Mixed Use District	600'	1200' to 1500'

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SR 161 MP 16.00 to 32.55, Generalized Proposed Land Use

Mile Post	Location Description	Proposed Land Use		Width of Land Parcel (Perpendicular to Highway)	
		Left	Right	Left	Right
MP 24.73 to 25.00	120th St. E to 116th St. E	Auto Oriented Commercial	Auto Oriented Commercial	500' to 750'	1500' to 750'
MP 25.00 to 25.22	116th St. E to 112th St. E	Auto Oriented Commercial	Auto Oriented Commercial	750' to 2800'	750' to 2800'
MP 25.22 to 25.85	112th St. E to SR 512	Auto Oriented Commercial	Auto Oriented Commercial	2800'	2800'
MP 29.22 to 30.05	UP RR Br. # 161/22 to MP 30.05 Vic.	Rural Separator	Rural Separator	*	*
MP 30.05 to 30.35	MP 30.05 Vic. to 36th St. E	Rural Activity Center	Rural Activity Center	800'	1200'
MP 30.35 to 31.08	36th St. E to 24th St. E	Rural Activity Center	Rural Activity Center	800'	1200'
MP 31.08 to 31.13	24th St. E to 22nd St. E	Rural Separator	Rural Separator	*	*
MP 31.13 to 31.58	22nd St. E to 16th St. E	Light Manufacturing	Mixed Use District	1000'	2600'
MP 31.58 to 32.13	16th St. E to Jovita Blvd.	Commercial/Business	Mixed Use District	*	2600'
MP 32.13 to 32.30	Jovita Blvd. to MP 32.30 Vic.	Commercial/Business	Mixed Use District	1500'	2600'
MP 32.30 to 32.48	Mp 32.30 Vic. to Military Rd.	Light Manufacturing	Mixed Use District	1500'	*
MP 32.48 to 32.55	Military Rd. to Pierce/King County Line	Commercial/Business	Rural Separator	1500'	*

* Width extends to over one mile.

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5.1 The WSDOT Highway System Plan Programs

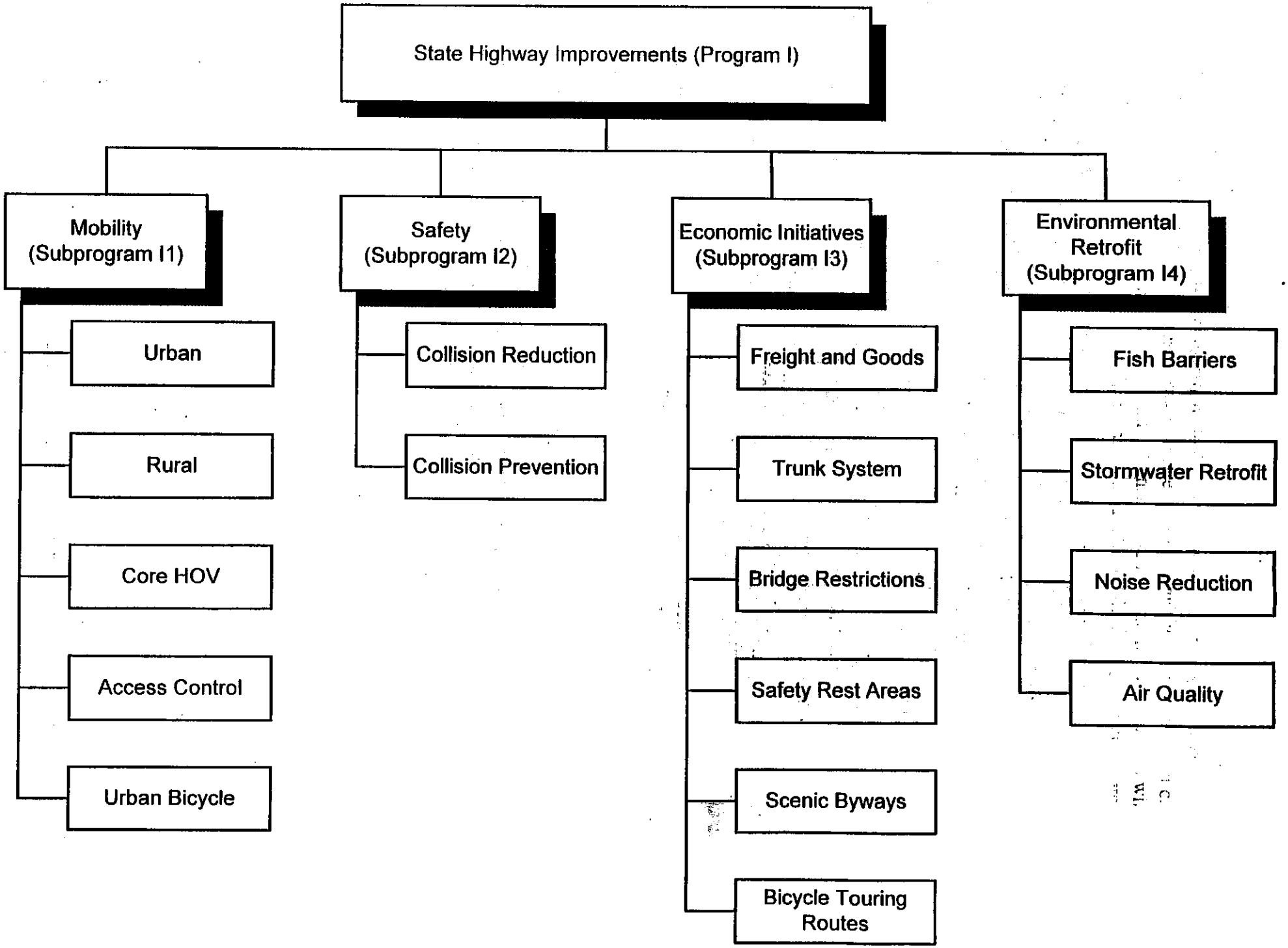
The *WSDOT State Highway System Plan* is one element of *Washington's Transportation Plan*. It is important because it is the basis for the 1997-99 state transportation budget and the 1997-2003 six-year plan. Specifically, it provides service objectives and strategies for maintaining, operating, preserving, and improving our state highways.

This SR 161 Route Development Plan focuses heavily on the Highway Improvement objectives and strategies contained in the *Highway System Plan*. Highway Operations is also discussed in this RDP. The other programs such as highway maintenance and preservation often do not require public consensus building. Highway maintenance such as patching potholes and filling cracks, are not covered in this RDP.

- **Recommended improvements are explained in this section of the SR 161 Route Development Plan.**

- **Project cost estimates and time frames for recommended completion are summarized in Section 8 of this RDP.**

For further information about the WSDOT Highway Improvement Programs, consult the most current *WSDOT Highway System Plan*. A Highway Improvement Program Structure tree is shown on the following page. As stated, this Route Development Plan focuses on the Highway Improvement Program, with subprograms such as Mobility, Safety, Environmental, and Economic. The program tree highlights the additional subcategories within the four Improvement subprograms.


State Highway Improvements (Program I)
Mobility (Subprogram I1)
Safety (Subprogram I2)
Economic Initiatives (Subprogram I3)
Environmental Retrofit (Subprogram I4)
Urban
Rural
Core HOV
Access Control
Urban Bicycle
Collision Reduction
Collision Prevention
Freight and Goods
Trunk System
Bridge Restrictions
Safety Rest Areas
Scenic Byways
Bicycle Touring Routes
Fish Barriers
Stormwater Retrofit
Noise Reduction
Air Quality

Highway Improvement Recommendations

This section of the SR 161 Route Development Plan contains recommendations for highway improvements and identifies those *WSDOT Highway System Plan* service objectives and action strategies that are applicable to the development of SR 161. Section 5 of this RDP is divided into categories for Mobility, Safety, Economic, and Environmental Improvements. Many segments of State Route 161 have been targeted for improvements in more than one category (i.e. a section of SR 161 may have targeted improvements in both Mobility and Safety). Therefore, check each category of improvements to determine all of the recommendations for a certain section of SR 161.

The RDP Steering Committee employed a number of resources in developing improvement strategy recommendations outlined in this RDP. Recommendations were arrived at after evaluating input from businesses in the areas and local residents. Every effort was made to apply good engineering judgments to find improvement strategies to the issues and concerns raised by the public. It is important to the Steering Committee that these improvements align with local and regional plans.

A public opinion survey of residences and businesses along the SR 161 corridor was conducted (see Section 7, Public Involvement). This process, as well as public open houses, city council meetings, and steering committee meetings, provided valuable input to the decision making that went in to the recommended highway improvements listed in this RDP. Also refer to Section 7 of this RDP for copies of letters received which offer support of or oppose certain highway improvement strategies.

Strategies outlined in the current *WSDOT Highway System Plan* were evaluated. These strategies were compared against local and regional transportation and comprehensive plans for concurrence. The WSDOT *Highway System Plan* will be modified and updated as needed after this Route Development Plan is approved. In some cases this RDP recommends different improvement strategies than the current WSDOT *Highway System Plan*. The reasons for these differences are due to the fact that the Steering Committee had the luxury of applying a more thorough planning effort to SR 161 than was previously expended in the *Highway System Plan* process. This provided an increase in the accuracy of working data such as traffic volumes and accident information, which sometimes led to different improvement strategy conclusions. Additionally the Steering Committee members, comprised of local and regional agency representatives provided valuable input when sharing their long range planning visions of SR 161.

5.2 Mobility Improvements

Highway System Plan Mobility Service Objective and Action Strategies

The *WSDOT Highway System Plan 1997-2016* Mobility Service Objective and Action Strategies that are applicable to the development of State Route 161 are listed below. For a complete listing of all action strategies consult the current *WSDOT State Highway System Plan.*

Service Objective:
Improve mobility within congested highway corridors.

Action Strategies:

- **Provide transportation strategies through transportation demand management to reduce the growth rate in vehicle miles traveled.**
- **Mitigate congestion on urban highways in cooperation with local and regional jurisdictions when the peak period level of service falls below Level of Service D.**
- **Whenever cost effective, reduce the number of existing or potential access points by purchasing access rights.**
- **Provide bicycle connections along or across state highways within urban growth areas to complete local bicycle networks.**

- ***Highway Location: 234th Street East to 204th Street East***
  MP 17.48 to MP 19.47
  Section Length: Approximately 1.99 miles

Deficiency: Present peak period Level of Service is below the acceptable LOS D for Urban Areas.

Expected Level of Service Results: LOS A and B (to year 2016)

Recommended Improvement:
This mobility project will provide additional lanes to SR 161 from 234th Street East to 204th Street East as described below:
This section of SR 161 is presently in the Design stage. What follows is a recommendation of improvements to address the existing mobility deficiencies that were discovered through the Route Development Plan process with the Steering Committee. Specific design level details have not been provided but will need to be developed that meet the changing community needs and funding restraints.

234th Street to Eustis Hunt Road:

- **Create a five lane facility by adding one additional lane each direction and a center two-way left-turn lane.** This section of SR 161 is designated as a Class 3 facility in the WSDOT *Access Management Plan*. This designation typically requires a center raised traffic island to control left turn movements, or a TWLTL may be used as conditions warrant. A TWLTL is recommended by the RDP Steering Committee. The Olympic Region Traffic Office supports this recommendation.
- **Traffic Signals** should be revised at 224th Street to accommodate this improvement. Additionally, a signal should ultimately be installed at Eustis Hunt Road.

Eustis Hunt Road to 204th Street East:

- **Create a four lane facility by adding one additional lane each direction with a center median barrier.**
- **A restrictive median** design using jersey barrier is recommended for this section of SR 161. This section of SR 161 is designated as a Class 2 facility in the WSDOT *Access Management Plan.* This designation typically requires the installation of jersey median barrier, when a facility is multi-laned. The Olympic Region Traffic Office and the RDP Steering Committee concur with this recommendation. Median barrier was discussed at the

public open houses. More public education will need to be done on this subject during the Design phase of this project.

- **Selected openings in the median barrier to allow left turn and U-turn movements are recommended.** In accordance with the *WSDOT Access Management Plan* Class 2 designation, openings in the median should be spaced no closer than one half mile apart. This Class 2 designation continues beyond 204th Street to 176th Street. **It is important to consider the overall Class 2 segment (from Eustis Hunt Road to 176th) when evaluating which existing intersections should remain accessible to left turning vehicles.** The Olympic Region Traffic Engineer was consulted for this evaluation. This resulted in the following list of intersections that are recommended to remain accessible to left turning vehicles when the highway is multi-laned. These would be the only locations provided for left turns or U-turns. The Olympic Region Traffic Office and the RDP Steering Committee propose traffic signals at these locations.
  This list includes the section of SR 161 between Eustis Hunt Road and 176th.
    - **Eustis Hunt Road**, MP 18.64 (begin Barrier north of intersection, begin *AMP* Class 2 designation)
    - **200th Street East**, MP 19.72
    - **194th Street East**, MP 20.08 (less than the standard 0.50 mile spacing, due to developments)
    - **187th Street East**, MP 20.52 (less than the standard 0.50 mile minimum, due to existing fire station)
    - **176th Street East**, MP 21.36 (end barrier section, end *AMP* Class 2 designation)

  Another note of importance: Too many openings in the restrictive median will not fulfill the spirit of the *Access Management Plan* Class 2 designation.
    - This Route Development Plan recommends realigning 204th Street East northerly to intersect SR 161 at 200th Street East. The reason for this is to allow access to 204th via the 200th Street intersection without providing separate median breaks.

  All other intersections and private approaches to SR 161 between Eustis Hunt Road and 176th that are not identified as receiving median left turn access, will be reduced to right-in, right-out access only.

- ***Highway Location: 204th Street East to 176th Street East***

MP 19.47 to MP 21.36

Section Length: Approximately 1.89 miles

Deficiency: Present peak period Level of Service is below the acceptable LOS D for Urban Areas.

Expected Level of Service Results: LOS B (to year 2016)

Recommended Improvement:

This mobility project will provide additional general purpose lanes to SR 161 from 204th Street East to 176th Street East as described below: This section of SR 161 (as discussed in the preceding recommended project) is designated as a Class 2 facility in the AMP.

- **Create a four lane facility by adding one additional general purpose lane each direction.**
- **A restrictive median design using jersey barrier is recommended for this section of SR 161** (per *WSDOT Access Management Plan*).
- **Openings in the restrictive median would occur as mentioned on the preceding page.**

- ***Highway Location: 176th Street East to 128th Street East***

MP 21.36 to MP 24.24

Section Length: 2.88 miles

Deficiency: Present peak period Level of Service is below the acceptable LOS D for Urban Areas.

Expected Level of Service Results: Unknown, traffic signals are the controlling factor.

Recommended Strategy:

This Route Development Plan does not recommend additional lanes for this 5-lane section of SR 161. The RDP Steering Committee recognized the high level of congestion problems in this section of SR 161. However, additional through lanes were not recommended. It is not economically feasible to widen at urban growth centers because of physical constraints. There will be a lot of businesses that will be displaced as a result. There is a concern that widening will attract more traffic, generating more congestion just north of this section and at SR 512 interchange. Widening will also promote urban sprawl. The following suggested improvements are recommended to increase mobility:

- Enforce access control by constructing sidewalk as developments occur.

- Curbs are needed at the left turn lanes at signalized intersections. This will restrict left turn movements in and out of driveways near these intersections.
- Consolidate driveway approaches.
- Increase capacity of existing City and County network of facilities. Consideration should be given to providing financial assistance to local agencies in their efforts to improve existing transportation routes if a benefit to SR 161 can be realized. A discussion of the proposed improvements to local routes is included in Section 2.
- A TWLTL is warranted for this section of SR 161, and is currently in place. Replacing the existing TWLTL with raised medians should be considered. This could be met with opposition. Studies suggest that it is easier to never construct a TWLTL than it is to remove one. Consideration should be given to the many available studies that indicate ADTs greater than 20,000 to 24,000 cause mobility and safety deficiencies with facilities that have TWLTLs.
- Increase non-motorized transportation.
- Increase Transit Services.
- Construct Park and Ride lots along the corridor.
- Support construction of new City or County facilities such as frontage or backage roads. Frontage roads would be difficult since many sections are already developed along the SR 161 frontage.
- Consider additional left or right turn lanes at signalized intersections.

Highlights of a Past Analysis:

This section of SR 161 was evaluated in the early 1980's, the result of which produced a document titled: *Route Analysis SR 161, 176th Street East to SR 512.* This analysis provided short and long range solutions to the then existing capacity problems on SR 161 from 176th Street East to State Route 512. State Route 161 had fewer lanes back then and the surrounding area known as "South Hill" was not as commercially built out.

It is interesting to note that this past study's recommendations parallel some of the strategies listed above in this RDP. Most of the short term improvements identified in the older study have been completed. Here's some quotes from this study dated June, 1981:

- "The Meridian corridor (SR 161) which serves commuter, retail-commercial, and industrial traffic will revert to the present congested condition...if action is not taken by affected jurisdictions to develop alternate corridors and access control to the existing facility"

- "Zoning and comprehensive planning policies by Pierce County and the City of Puyallup must encourage the development of internal traffic circulation patterns as commercial and industrial expansion continues. Frontage roads developed within the expansion areas would relieve congestion along SR 161 and control points of access. New access points to SR 161 through the study area must be minimized and effort must be renewed to consolidate existing driveways where practical."

- "To widen SR 161 beyond the proposed five lanes would be impractical due to the close proximity of commercial businesses, many of which would have to be purchased and/or relocated. The expense for relocation and right of way would be prohibitive over the improvement gained by a sixth lane. It can be seen that other improvements or alternatives are needed such as interconnected parallel routes or a new independent alignment to relieve the projected congestion along SR 161 by the year 2000."

Other recommendations in the 1981 report suggested: restricting left turn lanes; a planted median strip; a couplet system; and a bypass road. Increased transit and the addition of a park and ride lot were thought to be only a short term fix for peak period traffic "...but eventually the remaining traffic and newly generated traffic will reestablish itself to its original intensity."

- ***Highway Location: 128th Street East to Meridian St***
  MP 24.24 to MP 25.66 Vicinity
  Section Length: 1.42 miles

Deficiency: *Present peak period Level of Service is below the acceptable LOS D for Urban Areas.*

Expected Level of Service Results: *Unknown, traffic signals are the controlling factor.*

Recommended Improvement:
Same as the previous section. This section of SR 161 includes 5 to 8 lanes and has sidewalks on both sides. Commercial developments are heavily built up around this section of SR 161. Additional lanes would not be cost effective.

- ***Highway Location: Meridian to SR 512 Interchange Vicinity***

MP 25.66 to MP 25.85 Vicinity
Section Length: 0.19 miles

Deficiency: *Present peak period Level of Service is below the acceptable LOS D for Urban Areas.*

Expected Level of Service Results: *Unknown, traffic signals are the controlling factor.*

Recommended Improvement:
Provide one additional lane each direction beginning at Meridian Street. Widen structure over SR 512 to accommodate lanes.

- ***Highway Location: SR 167 Ramps Vic. to 36th Street East***

MP 28.80 to MP 30.35
Section Length: 1.55 miles

Deficiency: *Present peak period Level of Service is below the acceptable LOS D for Urban Areas.*

Expected Level of Service Results: *LOS B (to year 2016)*

Recommended Improvement:
Provide two general purpose through lanes each direction. This includes the section known as "North Hill", where beginning at MP 29.53, a northbound climbing lane has been provided. It will be very expensive to widen SR 161 on this hill. This fact may result in this project not competing well in the cost/benefit analysis project ranking process used by WSDOT.

Additionally, the State Route 167 Corridor Extension should be constructed. This project would complete the SR 167 freeway from Puyallup to the Port of Tacoma, with included interchanges at Interstate 5 and SR 509. It is predicted that the corridor extension proposal for SR 167 will relieve the traffic congestion and reduce accidents on SR 161 through North Hill and Edgewood.

• Highway Location: 36th Street East to Jovita Boulevard
MP 30.35 to MP 32.12
Section Length: 1.55 miles

Deficiency: *Present peak period Level of Service is below the acceptable LOS D for Urban Areas.*

Expected Level of Service Results: *Estimate LOS D and better. Traffic signals would control LOS.*

Recommended Improvement:
This project is presently entering the Design phase. It is expected to provide one additional general purpose lane each direction, creating a five lane roadway through the Cities of Edgewood and Milton. Traffic signals and channelization will also be evaluated.

Highlights of Public and Agency Opinions:
The City of Edgewood has been opposed to additional lanes on SR 161 through the city. Edgewood is presently preparing their Comprehensive Planning documents. The City of Edgewood has recommended consideration of non-widening alternatives, such as coordinating traffic signals, moving the traffic signal at Jovita Blvd., and completing SR 167. The City of Milton has informed WSDOT of its support for capacity improvements on SR 161 from Federal Way south to 36th Street East. Section 7 of this RDP presents letters received by WSDOT from these agencies expressing their project preferences.

The Puget Sound Regional Council's *Metropolitan Transportation Plan*, dated May 1995, identifies SR 161 as a regionally significant state highway within the Metropolitan Transportation System (refer to MTS map presented in Section 2 of this RDP). This plan does concur with widening SR 161 through the Cities of Milton and Edgewood.

Pierce County's *Transportation Plan*, dated September 1992, recommends as a 'premier priority' widening SR 161 and improving intersections along the route from SR 167 to the Pierce/King County Line.

The recent Public Opinion Survey prepared by Pacific Rim Resources for the WSDOT Olympic Region points out some interesting findings for the Edgewood/Milton section of SR 161.

- More than eight out of ten (81%) residents surveyed feel that the traffic situation in the Edgewood/Milton vicinity has worsened over the last five years. Of the 396 businesses familiar with the area, seventy-four percent (74%) feel traffic on SR 161 has gotten worse in the past five years.

- Ninety-one percent (91%) of the residences and 92 percent of the businesses surveyed feel that the condition of SR 161 will continue to degrade if no improvements are made to it. When asked what they feel will cause this worsening condition, respondents replied cited population increases and narrow roadway as primary reasons.
- Respondents were asked to choose between three facility modification alternatives for alleviating traffic problems on SR 161 through Edgewood/Milton--four lanes with a median strip, five lanes with a center turn lane, or leaving the three lane section as is. Sixty-four percent of residences and seventy-six percent of businesses favored the five lane roadway option.

The preceding summary of opinions appears to support the addition of general purpose lanes to SR 161 from 36th Street East to the City of Federal Way. The Steering Committee does recognize the City of Edgewood's general opposition to capacity improvements to SR 161, and the City's opinion that WSDOT should focus this attention on SR 167, not SR 161. It is important to note that the Steering Committee did not reach consensus on the issues of highway capacity expansion and access management through the City of Edgewood. This does present difficulty to the WSDOT Design Office as they move forward with delivering a Design concept that attempts to satisfy the needs of all the stakeholders involved.

- ***Highway Location: Jovita Blvd. to S 360th/Milton Rd***

MP 32.05 Vic. to MP 34.14

Section Length: 2.09 miles

Deficiency: *Present peak period Level of Service is below the acceptable LOS D for Urban Areas.*

Expected Level of Service Results: *According to the Design Report for this project, the intersections at Milton Way and Jovita Blvd. are expected to operated at a LOS F and E respectively by the year 2010 with the improvements.*

Recommended Improvement:

This WSDOT NW Region widening project is Stage 2 of the larger project known as "SR 161, Jovita Blvd. to SR 18, Widening". This Stage 2 project will provide additional lanes to SR 161, creating a five lane facility, two lanes each direction and a center TWLTL. This project extends south of the King/Pierce County line, into the WSDOT Olympic Region. This project is also expected to provide an improvement to the existing Jovita Blvd. intersection at MP 32.09 by realigning it to intersect SR 161 further north, or by providing a realignment of Jovita southeasterly to intersect 8th Street. Presently the two signalized intersections of Milton Way/8th Street and Jovita Boulevard are experiencing poor operating levels of service due to the limited number of through lanes and their close spacing of approximately 300 feet.

This project should be coordinated with the Olympic Region Design project "36th Street East to Jovita Blvd." to provide efficient route continuity.

5.3 Traffic Operations

With the creation of the *Highway System Plan*, Traffic Operations (Program Q) was developed.

Traffic Operations relates to urban highway sections where the efficiency of the transportation system is improved through means of low-capital investments such as high occupancy vehicle (HOV) lanes, ramp metering, HOV bypass lanes, exclusive HOV access, variable message signs (VMS), closed circuit television (CCTV), and incident response teams (IRT's). The Traffic Operations approach is intended to maximize benefit of today's limited resources and to expand the use of existing transportation facilities and services to the greatest extent possible. Traffic Operations measures will help reduce the number of single occupancy vehicles using the highway, thus to some degree, reduce the need for future capacity expansion.

Highway System Plan Traffic Operations Service Objective and Action Strategies

All of the *WSDOT Highway System Plan 1997-2016* Traffic Operations service objective and action strategies could be applicable to the development of State Route 161 and are provided below.

Service Objective:
Operate the highway transportation system safely and efficiently.

Action Strategies:

- **Increase highway efficiency and safety through full utilization of the existing system.**
- **Improve arterial efficiency and safety through traffic signal timing and coordination efforts.**
- **Perform safety and efficiency investigations in response to constituent concerns to identify small cost operational enhancement opportunities.**
- **Implement consistent statewide traffic design and operational policy, specifications, and regulations.**
- **Evaluate and deploy proven technology applications to optimize the existing system investments.**
- **Develop and implement small cost, immediate improvements to address identified operational, safety, and efficiency concerns.**

These action strategies show how closely tied this program is to the mobility and safety improvement programs. This route development plan addresses some of these TSM strategies by proposing, as part of the mobility improvements, to revise and coordinate traffic signals.

5.4 Transportation Demand Management

Transportation demand management (TDM) contains a broad range of strategies intended to reduce and reshape the demand of the transportation system. Such strategies are often relatively low in cost. Their success depends both upon the active cooperation of the private sector, and upon affective decision making by the individuals who use the transportation system. System expansion for single occupancy vehicles is a last resort strategy. TDM measures can include:

- Carpool or vanpool formation assistance
- Encouraging people to walk or ride a bike
- Transit subsidies
- Worker-driver programs for buses and vanpools
- Passenger-only ferry systems
- Designated carpool or vanpool parking
- Parking restrictions - increased parking prices
- Work hour flexibility
- Telecommuting

The Route Development Plan Steering Committee did not discuss this issue to the details necessary to prescribe recommendations. There are many possibilities for effective TDM strategies along most state highways, SR 161 included. Many, however, are not controlled by WSDOT, but are in the hands of the local and regional agencies and the private sector. WSDOT does encourage these agencies to move forward with plans to implement these "State Interest" strategies.

5.5 Transit Services and Park & Ride Lots

Public Transit

Public transit services can have a positive affect on State Route 161 by reducing the volumes of general purpose vehicles. The city, county, and regional transportation plans were reviewed to acknowledge any plans for

future transit service to SR 161. WSDOT supports efforts to provide increased transit service to SR 161 and is committed to providing safe and efficient access to transit users along the state route.

The *State Highway System Plan* assumes that some form of high capacity transit (such as commuter buses and rails) will be funded and in operation in the Central Puget Sound region in the next 20 years.

Pierce Transit has been providing transit service since 1980. Route 402 is operating on SR 161 between Graham at 224th Street and the Federal Way Park and Ride Lot, with several stops in between. On weekends, the route only operates between South Hill at 160th Street and the Federal Way Park and Ride Lot. This transit route makes a regular stop at the Puyallup Transit Center which serves as a connection center between different transit routes. These routes are listed below with their respective destinations:

Transit Route Number	Destination
202	Sumner/Lakewood
400	Downtown Tacoma/Puyallup
403	Orting
406	Bonney Lake/Enumclaw
407	Bonney Lake/Prairie Ridge

The transit services mentioned above are effective through September 1, 1996.

The *Pierce Transit System Plan* identifies the following service improvements:

Regional Express - Pierce Transit will expand service during the peak period between Puyallup and Auburn/Renton by the year 2000. It will also expand peak hour services during midday between Puyallup and Auburn/Kent and between Puyallup and Seattle by the year 2005. By year 2010, it will continue to expand regional express services concentrating on growing regional commute destinations. New services will likely improve frequencies on existing express routes where overcrowding occurs. By the year 2020, modest bus service improvements will be done, including additional trips to relieve overcrowding. Bus service may be removed where it duplicates rail service.

Commuter Express and Center Connections - Connections will begin serving the key corridors of Bonney Lake/South Hill-Boeing (Fredrickson) and between Lakewood and Puyallup by the year 2000 with additional

corridors Lakewood to Boeing (Fredrickson) and Puyallup to TCC by the year 2005. By year 2010, midday services and expanded commute hour services will be added on routes that experience significant demand. Modest improvements will take place by year 2020, including additional trips to relieve overloading.

Local Fixed Route - Pierce Transit will upgrade services in Puyallup/Sumner by the year 2000. It will improve frequencies by the year 2005. Improvements on high demand local routes will be made by establishing new routes in developing neighborhoods surrounding Puyallup and Sumner, and in Mid County areas, especially near Fredrickson and Spanaway by the year 2010. Generally modest service expansion will be provided by year 2020 reflecting the relatively low rate of population growth.

Park and Ride Lots

Park and ride lots are becoming increasingly necessary in Pierce County and the South Puget Sound Region. These facilities promote ride sharing and increased use of public transportation, which in turn reduces the demand for increased automobile capacity. This Route Development Plan recommends some locations in the vicinity of State Route 161 that should be considered as Park and Ride lot or Transit Center sites. The following tables provides an inventory of existing and proposed Park and Ride lots and Transit Centers.

SR 161 Existing Park and Ride Lots and Transit Centers
Graham Vicinity to Pierce/King County Line

Location & Facility Type	Existing Capacity	Comments
9421 128th Street E P & R Lot	20 stalls	Lot operated by Pierce Transit, no transit service at this time.
160th St E & Meridian St P & R Lot	39 stalls	Express and local service, Route 402 ***THIS LOT IS PRESENTLY CLOSED***

SR 161 Suggested Locations for Park and Ride Lots and Transit Centers Graham Vicinity to Pierce/King County Line

Location & Facility Type	Capacity	Comments
Puyallup/Sumner P & R Lot	500 stalls	To be built before year 2010, $5.0 M
South Hill P & R Lot	400-500 stalls	To be built before year 2010, $5.8 M
South Hill/Graham P & R Lot	500 stalls	To be built before year 2020, $5.8 M
South Hill Mall Transit Center		To be built before year 2000, $2.0 M
West of 94th Avenue E P & R Lot	450 stalls	Property bought by WSDOT

5.6 Highway Safety Improvements

Highway System Plan Safety Service Objective and Action Strategies

All safety strategies are included in the financially constrained portion of the *WSDOT Highway System Plan 1997-2016.* Highway Safety Service Objective and Action Strategies that are applicable to the development of SR 161 are listed below. For a complete listing of all action strategies consult the current *WSDOT Highway System Plan.*

Service Objective:
Provide the safest possible highways within available resources.

Action Strategies:

- **Improve highway sections that have a high accident history.** ***Collision Reduction***
- **Improve roadways where geometrics, traffic volumes, and speed limits indicate a high accident potential.** ***Collision Prevention***
- **Construct intersection channelization, signals, or both when traffic volume warrants (thresholds) are met. Also** ***Collision Prevention***

Collision Reduction

Collision Reduction strategies target highway locations that have a high accident history. Specific elements of the Collision Reduction category that apply to the RDP are identified below.

High Accident Corridors (HACS) - Identify "corridor" type sections of highway (typically greater than 1 mile) that exhibit accident severity and number rates above the statewide average for similar highways. Five years of accident history are used for determining the locations needing improvements.

Collision Prevention

Run-off-the Road Collision Prevention (Risk Reduction)- targets locations that possibly may not have a high accident history but exhibit a strong potential for future run-off-the-road accidents, based on the highway geometry, traffic volumes, and speeds. Listed below are some specific

elements of the Collision Prevention category that are applicable to State Route 161.

Risk Reduction - Proactively identifies sections of state highways that have a high probability of vehicles leaving the roadway.

Signals and Channelization Collision Prevention - Identifies high priority intersection improvements such as new traffic signals and added turn lanes.

Present Accident History and Analysis

Information regarding recent traffic accident data for SR 161 was prepared by the WSDOT Planning and Programming Service Center, Transportation Data Office in Olympia. The accident information is presented through a series of tables in Appendix A of this Route Development Plan. The information provided in these summary tables may be used to determine leading causes and affects of accidents, accident rates, and conditions of the roadway during the accidents. This data aids the engineer in developing sensible strategies to reduce accidents in those areas defined as High Accident Corridors (HACs).

Identified Safety Deficient Sections

The following areas have been targeted as Collision Reduction or Collision Prevention sections of State Route 161.

Present Collision Reduction Locations
High Accident Corridors (HACS)

Begin MP	End MP	Section Length (miles)	Section Description
17.00	21.36	4.36	244th St E. vicinity to 176th St E.
21.36	24.00	2.64	176th St E. to 132nd St E.
29.50	30.30	0.80	Dechaux Rd. E. to 36th St E. vicinity
30.30	31.50	1.2	36th St E. Vic. to 16th / 18th Sts. E. Vic.

Source: *State Highway System Plan 1997-2016*, March 1996

Present Collision Prevention Locations
(Run-off-the-road)

Begin MP	End MP	Section Length (miles)	Section Description
21.32	21.33	0.01	Sag vertical curve Vic. south of 176th St E.
25.66	25.75	0.09	Meridian St intersection to SR 512 EB ramps
29.38	30.38	1.00	Railroad Overcrossing Vic. to 36th St E. Vic. "North Hill" possibly substandard horizontal/vertical alignment
32.45	32.53	0.08	Military Rd. intersection vicinity

* Source: *State Highway System Plan 1997-2016*, March 1996

The following recommended Safety projects provide strategies to current Collision Reduction and Collision Prevention target areas. Recommended strategies to address HACs are based on recent accident analyses and previous strategies contained in the current *Highway System Plan*. It was found that some Collision Prevention sections *overlap* with Collision Reduction sections; and the best improvement strategies are usually common to both.

- ***Highway Location: 244th St E. Vicinity to 176th St E.***
  MP 17.00 to MP 21.36
  Section Length: 4.36 miles

Deficiency: Identified as a HAC

Recommended Improvement:
This section is presently entering the Design Phase. Rear-end collisions are one of the most common types of accident in the Graham vicinity. **The proposed capacity, signalization, and channelization improvements are recommended as the most cost-effective means to reduce the number and severity of this type of accident in the section (see Mobility).**

- ***Highway Location: South of the 176th St E. Intersection***
  MP 21.32 to MP 21.33
  Section Length: 0.01 miles

Deficiency: Identified as a Collision Prevention (run-off-the-road) section

Recommended Improvement:
This Collision Prevention location falls within a Collision Reduction and Mobility Improvement section of SR 161. Additionally, this location is included in the limits of the Design project "234th Street East to 176th Street East" that is presently underway. There is evidence that the reason this is identified as a *run-off-the-road* location is due to the vertical alignment directly south of 176th Street East and high traffic volumes. **The recommended cost-effective improvement to prevent run-off-the-road accidents, is to improve the vertical profile of the roadway at this location.**

The proposed capacity improvements are also recommended as a potentially cost-effective means to reduce the number and severity of accidents in the section (see Mobility).

- ***Highway Location: 176th St E. to 132nd St E.***

MP 21.36 to MP 24.00
Section Length: 2.64 miles

Deficiency: Identified as a HAC

Recommended Improvement:
The leading accident type on this 5-lane facility involves rear-end collisions. The *Highway System Plan* currently identifies "Miscellaneous Access Treatments" as the strategy to address this High Accident Corridor. This section is not identified in this RDP to receive additional lanes (see Mobility). Between 176th Street East and State Route 512, SR 161 carries a very high volume of traffic. To compound the situation, a high level of commercial developments are established along SR 161 in this area of Pierce County and the City of Puyallup. **The recommended strategy to reduce accidents in this section of SR 161 is to pursue a higher degree of Access Control, as discussed further under *Mobility*.**

- ***Highway Location: Meridian St to SR 512 EB Ramps Vic.***

MP 25.66 to MP 25.75
Section Length: 0.09 miles

Deficiency: Identified as a Collision Prevention (run-off-the-road) section

Recommended Improvement:
This section of State Route 161 is very congested. The *Highway System Plan* strategy for this section is "No Action (Puyallup), 35 MPH Signal Controlled or included in mobility improvement cost estimate". **It is recommended that additional capacity improvements, such as additional lane(s) be constructed between these two traffic signals (see Mobility).**

- ***Highway Location: Dechaux Rd. E. to 36th St E. Vicinity***

MP 29.50 to MP 30.30
Section Length: 0.8 miles

Deficiency: Identified as a HAC

Recommended Improvement:
Roadway cross-section and geometric improvements, and improved access treatments are recommended as a strategy to reduce accidents on this section known as "North Hill". Local citizens have provided the following observations and suggestions:

- Vehicles have poor sight distance due to the horizontal and vertical alignment. This suggests the need for realignment (a recommended short

term strategy is continuous maintenance of roadside obstructions such as vegetation--the Olympic Region Traffic Office was notified, and this type of maintenance has been recently done).

- 102nd Avenue (MP 30.07) needs improved channelization. Citizens mentioned how afternoon traffic in the Southbound, downhill direction backs up while waiting for a vehicle to make a left turn onto 102nd Avenue.
- Vehicles are exceeding the posted speed limit, and this may be a contributing factor to the accidents on North Hill. Presently the hill is signed with an advisory speed limit of 30 MPH.

- ***Highway Location: R.R. Overcrossing Vic. to 36th St E. Vic.***

MP 29.38 to MP 30.38
Section Length: 1.00 mile

Deficiency: *Identified as a Collision Prevention (run-off-the-road) section*

Recommended Improvement:
This section is included in the above mentioned HAC section, and the recommended solution is the same.

- ***Highway Location: 36th St E. Vic. to 16th / 18th Sts. E. Vic.***

MP 30.30 to MP 31.50
Section Length: 1.20 miles

Deficiency: Identified as a HAC

Recommended Improvement:
This section of SR 161 is included in the present Design project "36th Street East to Jovita Blvd.". The Highway System Plan identifies the improvement strategy as "Programmed project and included in constrained mobility solution". This means that the Mobility improvements determined in the above mentioned Design project is the recommended strategy to reduce the number and severity of accidents.

The leading accident types in this section are rear-end and enter-at-angle collisions. **Recommended improvements include removal of all or parts of the TWLTL and "retrofitting" those sections with raised traffic islands.** Improved capacity (see Mobility) is also recommended is a cost-effective means of reducing the number and severity of accidents in this section, particularly with if they include improved access control measures.

- ***Highway Location: Military Road Intersection Vic.***
  MP 32.45 to MP 32.53
  Section Length: 0.08 miles

  Deficiency: Identified as a Collision Prevention (run-off-the-road) section

  Recommended Improvement:
  This section of SR 161 is included in the WSDOT Northwest Region Design project "SR 161, Jovita Blvd. to SR 18 Widening". The Design Report for this project identifies some improvements to this section, such as provide additional lanes, signalize Military Road intersection, and other improvements to the roadway shoulder for non-motorized travel. **These improvements should reduce the potential for run-off-the-road accidents in this location.**

5.7 Economic Initiatives

Highway System Plan Economic Initiatives Service Objectives and Action Strategies

The *WSDOT Highway System Plan 1997-2016* Economic Initiatives Service Objectives and Action Strategies are not applicable to the development of State Route 161 and have not been provided in this Route Development Plan.

One purpose of the Economic Initiatives is to provide highway improvements that will increase tourism in Washington State. This program recognizes deficiencies and identifies solutions to such topics as highway seasonal load restrictions, narrow shoulders on designated bicycle touring routes, new safety rest areas, and scenic and recreational highways.

None of the categories under Economic Initiatives apply to State Route 161.

5.8 Environmental Retrofit

Highway System Plan Environmental Retrofit Service Objective and Action Strategies

The *WSDOT Highway System Plan 1997-2016* Environmental Retrofit Service Objective and Action Strategy that are possibly applicable to the development of SR 161 are listed below. For a complete listing of all action strategies consult the current *WSDOT Highway System Plan.*

Service Objective:
Retrofit state highway facilities as appropriate to reduce existing environmental impacts.

Action Strategy:
- **Reconstruct storm water discharge facilities as opportunities arise.**

Recommended Environmental Retrofit Improvements

Evaluation and practicable improvements for storm water discharges should be included in all improvement projects. This Route Development Plan does not go into detail on improvements in this category. However, the current *WSDOT Highway System Plan* identifies the following solutions in alignment with the Storm Water Runoff Action Strategy:

- ***Highway Location: Vicinity of 194th Street East***
  Vicinity MP 20.06

Deficiency: *Identified as a location to improve Storm Water management.*

Recommended Improvement:
Construct Dry Pond.

- ***Highway Location: Vicinity of 37th Avenue SE***
  Vicinity of MP 25.40

Deficiency: *Identified as a location to improve Storm Water management.*

Recommended Improvement:
Construct Wet Vault.

- ***Highway Location: Vicinity of Dechaux road East***

Vicinity MP 29.45

Deficiency: *Identified as a location to improve Storm Water management.*

Recommended Improvement:
Construct Bioswale.

In addition to the above three project locations, the Route Development Steering Committee members from the City of Edgewood stated that there is a potential storm water runoff problem at the following location.

- ***Highway Location: Vicinity of 16th Street East***

Vicinity MP 31.58

Deficiency: *The RDP Steering Committee members and citizens of the City of Edgewood identified flooding at the SE quadrant of the 16th Street East intersection.*

Recommended Project Solution:
Investigate and resolve through the Design project "SR 161, 36th Street East to Jovita Blvd.".

5.9 Traffic Signal Recommendations

Traffic signals impact both highway mobility and highway safety. They often control the operating level of service of a facility if they are closely spaced. They also create a safer facility by reducing the severity of accidents at unsignalized intersections.

Traffic signals are discussed separately in this section of the SR 161 Route Development Plan. Improvements to existing traffic signals, and proposed future signal locations, should be considered to be included in a future mobility or safety project.

The WSDOT *Access Management Plan (AMP)* plays an important role in planning for highway developments. The *AMP* was consulted, as well as the WSDOT Olympic Region Traffic Engineer and the RDP Steering Committee when the SR 161 corridor was evaluated for future traffic signal needs and locations. Within the study limits of this RDP, the *AMP* identifies SR 161 as a Class 2 and Class 3 facility. A criteria of these designations is that openings in restrictive medians should occur at one half mile intervals or greater. There are many traffic signals along SR 161 in the Puyallup area, and some in the Cities of Edgewood and Milton. The following tables provide information relating to existing and proposed traffic signals on SR 161. The tables also present information summarizing the *Access Management Plan* classes as they apply to sections of SR 161.

SR 161 Intersection Inventory
Traffic Signal Locations--Existing and Proposed

INTERSECTING STREET NAME	Left Right Both	SRMP	Distance to next Intersection (miles)	Speed Limit (MPH)	SIGNALIZATION					ACCESS	
					Existing Yes/No	Proposed Future Yes/No	Distance to next signal	Signal Type	Signal Coordination	Highway Class	Median Existing
234th St E	R	17.58	0.12	40	No	No				Class 3	none
232nd St E	L	17.70	0.13	40	No	Yes	0.51	Traffic		Class 3	none
229th St E	R	17.83	0.38	40	No	No				Class 3	none
224th St E	B	18.21	0.43	40	Yes	Yes	0.43	Traffic		Class 3	none
Eustis Hunt Road/Pierce Co Fairgrounds	B	18.64	0.27	50	No	Yes	1.08	Traffic		End Cl 3, Beg. Cl 2	none
213th St E	L	18.91	0.56	50	No	No				Class 2	none
204th St E	L	19.47	0.25	50	No	No				Class 2	none
200th St E	R	19.72	0.32	50	No	Yes	0.36	Traffic		Class 2	none
Graham Road E	R	20.04	0.04	50	No	No				Class 2	Left Tur Chan.
194th St E	B	20.08	0.20	50	No	Yes? Developer	0.44			Class 2	Left Tur Chan.
191st St E	L	20.28	0.10	50	No	No				Class 2	none
189th St E	L	20.38	0.14	50	No	No				Class 2	none
187th St E	B	20.52	0.49	50	Yes	Yes	0.84	Emergency		Class 2	none
County Dump Road	R	21.01	0.35	50	No	No				Class 2	none
176th St E	L (B)	21.36	0.03	45	Yes	Yes	0.03	Traffic	System	Class 3	Left Turn Cl / BeginTWL
South Hill Fred Meyer	L	21.39	0.33	45	Yes/No	Yes	0.83	Traffic	Proposed/system pre-emtion	Class 3	TWLTL

SR 161 Intersection Inventory
Traffic Signal Locations--Existing and Proposed

INTERSECTING STREET NAME	Left Right Both	SRMP	Distance to next Intersection (miles)	Speed Limit (MPH)	SIGNALIZATION					ACCESS	
					Existing Yes/No	Proposed Future Yes/No	Distance to next signal	Signal Type	Signal Coordination	Highway Class	Median Existin
152nd St E	B	22.73	0.18	40	Yes	Yes	0.50	Traffic	Isolated, 160th through 136th should be coordinated	Class 3	TWLTL
149th St E	R	22.91	0.13	40	No	No				Class 3	TWLTL
147th St E	R	23.04	0.19	40	No	No				Class 3	TWLTL
144th St E	B	23.23	0.15	40	Yes	Yes	0.51	Traffic	Isolated, 160th through 136th should be coordinated	Class 3	TWLTL
141st St E	R	23.38	0.36	40	No	No				Class 3	TWLTL
136th St E	B	23.74	0.24	40	Yes	Yes	0.24	Traffic	Isolated, 160th through 136th should be coordinated	Class 3	TWLTL
132nd St E	R	23.98	0.26	40	No	Yes	0.26	Traffic		Class 3	TWLTL
128th St E	B	24.24	0.27	35	Yes	Yes	0.49	Traffic		Class 3	TWLT
123rd Ct E	R	24.51	0.09	35	No	No				Class 3	TWLT
122nd St E	B	24.60	0.13	35	No	No				Class 3	TWLT
120th St E	R	24.73	0.14	35	Yes	Yes	0.27	Traffic	System	Class 3	TWLT
118th St E / Shopping Center	B	24.87	0.13	35	No	No				Class 3	TWLT
116th St E	B	25.00	0.25	35	Yes	Yes	0.25	Traffic	System	Class 3	TWLT
112th St E / Shopping Center	B	25.25	0.12	35	Yes	Yes	0.12	Traffic	System	Class 3	TWLT
37th Ave SE	B	25.37	0.13	35	Yes	Yes	0.13	Traffic	System	Partial Control	TWLT
35th Ave SE	B	25.50	0.16	35	Yes	Yes	0.16	Traffic	System	Partial Control	TWLT
Meridian St	R	25.66	0.10	35	Yes	Yes	0.10	Traffic	System	Full Control	TWLT

SR 161 Intersection Inventory
Traffic Signal Locations--Existing and Proposed

INTERSECTING STREET NAME	Left Right Both	SRMP	Distance to next Intersection (miles)	Speed Limit (MPH)	SIGNALIZATION					ACCES	
					Existing Yes/No	Proposed Future Yes/No	Distance to next signal	Signal Type	Signal Coordination	Highway Class	Media Existin
SR 167 EB On-ramp/North Levee Road	B	28.70	0.03	35	Yes	Yes	0.03	Traffic	Proposed System	Full Control	none
SR 167 WB Off-ramp	R	28.73	0.07	35	Yes	No	0.07	Traffic	System	Full Control	none
Valley Ave.	B	28.80	0.26	35	Yes	Yes	1.55	Traffic	System	Partial Control	none
Spencer Rd NE	R	29.06	0.43	40	No	No				Class 2	none
Dechaux Rd E	R	29.49	0.58	40	No	No				Class 3	none
102nd Ave E	R	30.07	0.28	40	No	No				Class 3	none
36th St E	B	30.35	0.24	40	Yes	Yes	0.24	Traffic	Existing = Isolated Proposed = System	Class 3	Begin TWLT
32nd St E	B	30.59	0.19	40	No	Yes	0.49	Traffic		Class 3	TWLT
29th St E	R	30.78	0.30	40	No	No				Class 3	TWLT
24th St E	B	31.08	0.34	40	Yes	Yes	0.50	Traffic	Existing = Isolated Proposed = System	Class 3	TWLT
18th St Ct E	L	31.42	0.16	40	No	No				Class 3	TWLT
16th St E	B	31.58	0.16	40	No	Yes	0.51	Traffic		Class 3	TWLT
13th St Ct E/Sunrise Lake Village	B	31.74	0.35	40	No	No				Class 3	TWLT
8th St E	B	32.09	0.04	40	Yes	Yes	>0.04	Traffic	System	Class 3	TWLT

5.10 Non-motorized Facilities

The Route Development Steering Committee discussed the needs of non-motorized travelers such as pedestrians and bicyclists. What resulted was a list of recommended improvements to State Route 161 such as paved shoulders and sidewalks. These types of improvements would likely occur during mobility or safety improvement projects, however they have been listed separately in this RDP for convenience.

It is noted that State Route 161 is not listed as a designated bicycle touring route in the *WSDOT Highway System Plan*. Also, as mentioned in the Highway Safety discussion in this RDP, SR 161 is not identified as having any Pedestrian Accident Locations (PALS). However, the following improvements to non-motorized travel are recommended and should be considered when an improvement project is programmed for a section of State Route 161.

- ***Highway Location: 234th St E to 176th St E***
  MP 17.58 to MP 21.36

Existing Facilities:
4' to 8' paved shoulder. Note: There is a school located on the NE quadrant of 224th Street and SR 161.

Recommended Improvement:
Paved shoulders and sidewalks as developments increase, and/or construct paved separated paths near existing R/W line (such as exists from 176th to 152nd)

- ***Highway Location: 176th St E to 152nd St E***
  MP 21.36 to MP 22.73

Existing Facilities:
4' to 5' paved paths located at edge of existing R/W (75' from centerline).

Recommended Improvement:
Use existing separated paths both sides. Consider sidewalks as developments increase (this also improves access delineation).

- ***Highway Location: 152nd St E to 128th St E***
  MP 22.73 to MP 24.24

Existing Facilities:
9' paved shoulders. In addition to the standard white edge stripe, these shoulders are delineated with large raised pavement markers.

Recommended Improvement:
Paved shoulders are adequate. Consider sidewalks as developments increase (this will also help access delineation).

- ***Highway Location: 128th St E to 35th St E***
  MP 24.24 to MP 25.49
  City of Puyallup, South Hill Mall Vic.

Existing Facilities:
Sidewalks on both sides. Very narrow shoulders between outside lane edge and curb.

Recommended Improvement:
None--Use existing sidewalks in this section.

- ***Highway Location: 35th St E to SR 512 Interchange.***
  MP 25.49 to MP 25.85
  City of Puyallup, South Hill Mall Vic.

Existing Facilities:
Existing sidewalk NB only from 35th to Meridian. This section of SR 161 is 5 to 8 lanes wide--difficult for pedestrians to cross.

Recommended Improvement:
In addition to this existing sidewalk, the City of Puyallup has suggested several improvements:
1. Provide sidewalks on both sides of SR 161 to beyond SR 512 O-xing structure. (If not both sides, the West side is priority.)
2. Provide a bike/ pedestrian O-xing near Meridian. WSDOT and the City of Puyallup could be partners in planning for this facility.

- ***Highway Location: SR 167 Vic. to Puyallup North City Limits***
  MP 28.69 to MP 29.24

Non-motorized section

Existing Facilities:
Paved shoulders vary from 2' to 8'.

Recommended Improvement:
Improve paved shoulders and/or provide sidewalks as development increases.

- ***Highway Location: Puyallup North City Limits to 36th St E***
  MP 29.24 to MP 30.35
  "North Hill"

Existing Facilities:
Paved shoulders vary from 2' to 8'.

Recommended Improvement:
Improve paved shoulders and/or improve other City/County roads for non-motorized travel.

- ***Highway Location: 36th St E to Milton Way***
  MP 30.35 to MP 32.09
  North Hill

Existing Facilities:
4' paved shoulders.

Recommended Improvement:
Resolve through present design project, improve shoulders and/or provide sidewalks.

- ***Highway Location: Milton Way to Pierce/King County Line***
  MP 32.09 to MP 32.55
  North Hill

Existing Facilities:
Paved shoulder varies from 3' to 11', some sidewalk.

Recommended Improvement:
Resolve through present design project and NW Region Design.
Provide paved shoulders in Milton. WSDOT NW Region Design project will provide for widened shoulders south to Jovita Blvd. Vic.

At the time of this Route Development Plan printing, two segments of State Route 161 are presently in the design phase in the WSDOT Olympic Region. These segments include SR 161 from 234th Street East to 176th, and from 36th Street East to Jovita Boulevard. Additionally, the WSDOT Northwest Region has been involved with design on SR 161 from the vicinity of Jovita Boulevard to SR 18 in Federal Way. Environmental issues will be addressed in detail as part of the design processes. Environmental impacts, including those affecting the City of Edgewood, will be analyzed, evaluated, and documented in detail during project development stages on SR 161.

These projects encompass a majority of the sections of SR 161 that are recommended to receive additional lanes. These design projects do not cover the sections of SR 161 from 176th Street East to SR 512 and from SR 167 vicinity to 36th Street East. The first section, 176th Street East to SR 512, has not been identified in this RDP to receive additional lanes. Therefore, since there will likely be no environmental impacts, an environmental assessment was not done on this section. The section from SR 167 to 36th Street East should be reviewed in depth for environmental issues when the project prioritizes. No major environmental impacts were seen at the screening level that was done for this document.

7.1 Local Agency and Public Input

A steering committee was formed to assist the WSDOT Olympic Region Planning Office in the route development planning process. The steering committee is made up of representatives from the City of Puyallup, City of Edgewood, City of Milton, Pierce County Public Works and Utilities, Pierce County Planning and Land Services, Pierce Transit, Puget Sound Regional Council (PSRC), WSDOT Office of Urban Mobility, and WSDOT Olympic Region Planning Office.

The steering committee meetings, executive interviews, and public open houses took place at various intervals to gain public participation and input. Display materials showing the route vicinity with the initial proposed projects were utilized to better present information and ideas. Six steering committee meetings were held at the Pierce County Annex Conference Room in Tacoma between February 1995 and March 1996. Separate executive interviews were conducted with the City of Milton, the City of Puyallup, Pierce County, and the citizens of the City of Edgewood. Four meetings with Edgewood City Council were conducted to discuss transportation issues concerning the city. Two public open houses were held at Graham Public Library and the Milton City Hall on January 29, 1996 and February 7, 1996, respectively, to get the public involved in the process. In addition to these public meetings, two in-house meetings were held at WSDOT Olympic Region office in Tumwater to circulate information regarding the progress of the route development plan between the Region Administrator, the Planning Office, the Tumwater Project Office, and the WSDOT Office of Urban Mobility. The table at the end of this section shows the different public meetings held in connection with this route development planning process.

The transportation elements of the comprehensive plans of the City of Puyallup, City of Milton, Pierce County, and PSRC were reviewed and compared to each other and to the WSDOT System Plan for concurrence. It is noted that the transportation plans and the WSDOT System Plan are aiming towards common goals and objectives. The City of Edgewood is currently in the process of producing a comprehensive plan. The WSDOT Planning Office had taken into consideration the local and regional transportation plans when projects were proposed to improve the route. Local agencies are encouraged to concur to the WSDOT route development plan.

7.2 Public Opinion Surveys

The WSDOT utilized the services of Pacific Rim Resources to conduct resident and business surveys for the study area of this Route Development Plan. The surveys were conducted between May 9 and May 20, 1996, the result summary of which was submitted to WSDOT on June 21, 1996. Telephone surveys were conducted of 300 randomly selected residents in the area from 234th Street in Graham to Jovita Boulevard near the Pierce/King County line. A mail survey was sent to businesses along the SR 161 corridor. A total of 439 surveys were completed and returned from businesses. These surveys were conducted to obtain a broad and representative assessment of public preferences for potential improvements on SR 161.

Some highlights of this survey are provided below:

- In general, perceptions and attitudes about SR 161 are similar with the two groups surveyed--local residents and businesses.
- When residents were prompted if SR 161 needs improvements, 87% of them feel the highway needs at least some improvements, 55% feel SR 161 'definitely needs improvements made' and a third (32%) feel it 'could use improvements'.
- Businesses responded similarly, with 68% feeling that the highway 'definitely needs improvements' and 24% stating that SR 161 'could use improvements'.
- Respondents were asked what they perceived as the existing problems to SR 161. Eighty-one percent of the residents felt that traffic congestion in general (which includes SR 161 and the surrounding transportation network) was the largest deficiency. Business responses were similar with 60% of the participants suggesting that congestion is their largest concern. Other issues that were mentioned by respondents included highway safety and highway access concerns.

The Executive Summary of the SR 161 Resident and Business Survey Summary Results is presented in Appendix C of this RDP.

A copy of the SR 161 Resident and Business Survey Summary Results is on file in the WSDOT Olympic Region Planning Office.

7.3 Public Meetings

SR 161 Route Development Plan Meetings Summary

MEETING	DATE	LOCATION	ATTENDEES
Initial Steering Committee Meeting Multi-Route: SR's 161, 162, 410	02/01/95	Pierce County Annex Conference Room C Tacoma, WA	Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. Puget Sound Regional Council WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
2nd Steering Committee Meeting Multi-Route: SR's 161, 162, 410	03/01/95	Pierce County Annex Conference Room C Tacoma, WA	City of Bonney Lake City of Buckley City of Orting City of Puyallup City of Sumner Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. Puget Sound Regional Council Town of South Prairie WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Tumwater Project Office
3rd Steering Committee Meeting Last Multi-Route meeting: SR's 161, 162, 410	04/12/95	Pierce County Annex Conference Room C Tacoma, WA	City of Bonney Lake City of Orting City of Sumner Foothills Rails to Trails Coalition Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. Pierce Transit Puget Sound Regional Council WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview City of Milton	07/17/95	Milton Senior Center Milton, WA	City of Milton WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview City of Puyallup	07/19/95	Puyallup Public Works Building Puyallup, WA	City of Puyallup Public Works WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview Pierce County	08/10/95	Pierce County Annex Building Tacoma, WA	Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview Citizens of City of Edgewood	08/16/95	Transition Team Office Edgewood, WA	United for Edgewood Transition Team WSDOT Olympic Region Planning
Executive Interview WSDOT Olympic Region Program Development	09/20/95	WSDOT Olympic Region HQ Tumwater, WA	WSDOT Olympic Region Program Development WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview WSDOT Office of Urban Mobility	09/25/95	WSDOT Office of Urban Mobility Seattle, WA	WSDOT Office of Urban Mobility WSDOT Olympic Region Planning

SR 161 Route Development Plan Meetings Summary (Continued)

MEETING	DATE	LOCATION	ATTENDEES
Information Sharing	10/23/95	WSDOT Olympic Region HQ Tumwater, WA	WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
4th Steering Committee Meeting	11/08/95	Pierce County Fire District #8 Edgewood, WA	City of Edgewood City of Milton City of Puyallup Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Tumwater Project Office
Information Sharing WSDOT Olympic Region	01/16/96	WSDOT Olympic Region HQ Tumwater, WA	Regional Administrator, WSDOT Olympic Region WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Open House	02/07/96	Graham Public Library Graham, WA	Public Pierce Transit WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Tumwater Project Office
Open House	02/13/96	Milton City Hall Council Chambers Milton, WA	Public City of Edgewood City of Milton Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. Pierce Transit WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
5th Steering Committee Meeting *Solutions Matrix Discussion to explore options*	03/11/96	Pierce County Fire District #8 Edgewood, WA	City of Edgewood City of Milton City of Puyallup Pierce Co. Public Works & Utilities Puget Sound Regional Council WSDOT Olympic Region Planning
Information Sharing WSDOT Olympic Region	03/22/96	WSDOT Olympic Region HQ Tumwater, WA	WSDOT Olympic Region Planning WSDOT Tumwater Project Office
6th Steering Committee Meeting ***Consensus reached on majority of issues***	03/25/96	Pierce County Fire District #8 Edgewood, WA	City of Edgewood City of Milton City of Puyallup WSDOT Olympic Region Planning WSDOT Tumwater Project Office

SR 161 Route Development Plan Meetings Summary (Continued)

Special Edgewood City Council meeting	04/08/96	Pierce County Fire District #8 Edgewood, WA	Public Edgewood City Council WSDOT Olympic Region Planning WSDOT Office of Urban Mobility
Edgewood City Council meeting	04/11/96	Pierce County Fire District #8 Edgewood, WA	Public Edgewood City Council WSDOT Olympic Region Planning WSDOT Office of Urban Mobility WSDOT Northwest Region Design
Edgewood City Council meeting	04/25/96	Pierce County Fire District #8 Edgewood, WA	Public Edgewood City Council WSDOT Olympic Region Planning WSDOT Office of Urban Mobility
Edgewood City Council meeting	05/09/96	Pierce County Fire District #8 Edgewood, WA	Public Edgewood City Council WSDOT Olympic Region Planning WSDOT Office of Urban Mobility
Edgewood City Council meeting	05/23/96	Pierce County Fire District #8 Edgewood, WA	Public Edgewood City Council WSDOT Olympic Region Administrator WSDOT Olympic Region Planning WSDOT Office of Urban Mobility

This section of the SR 161 Route Development Plan summarizes the recommended projects covered in detail in Section 5. Mobility Improvement Projects are shown in terms of estimated costs and recommended completion time frames. All other projects such as Safety Improvement, or Environmental Retrofit projects have not been prioritized. Cost estimates were taken from available sources such as the current six year plan and the *Highway System Plan*. A more detailed description of these projects is provided in Section 5 of this RDP.

All projects identified in this RDP are contained within the current *Highway System Plan*.

About Mobility Improvement Projects:
Improvements to deficiencies in urban and rural areas of the state are funded based upon urban and rural designations of the Growth Management Boundary. Allocation of urban and rural Mobility funds to each region is based on a combination of the region's prorated share of the total *Highway System Plan* mobility deficiencies and targeting top mobility deficiencies throughout the state.

About Safety Improvement Projects:
Safety improvement Projects are programmed similar to Mobility projects. They are ranked according to Cost/Benefit Analyses. This Route Development Plan does not address time frame for completion of the Safety Improvement Projects. However, they are listed with associated cost estimates.

8.1 Short Term Mobility Improvement Projects

The following projects are recommended to be constructed within the next six years (1997 - 2003). The projects concur with the current WSDOT Six Year Plan, which is a financially unconstrained list of potential projects. The Mobility projects listed here are presently only funded through preliminary engineering. Right-of-way purchase and actual construction is presently not funded. An increase in the fuel tax is required for these projects to be completed within the next six years.

State Route 161 Short Term (Next Six Years)
Recommended Mobility Projects
Graham Vicinity to King County Line

Project Description	Estimated Cost		
	Grand Total	Total Funded	Total Unfunded
234th St E to 204th St E, Widening MP 17.58 to MP 19.47	$8,230	$284	$7,946
204th St E to 176th St E, Widening MP 19.47 to MP 21.36	$3,628	$326	$3,302
36th St E to Jovita Blvd., Widening MP 30.35 to MP 32.09	$5,073	$378	$4,695
Jovita Blvd. to S 360th/Milton Rd, Widening, Stage 2 MP 32.05 Vic. to MP 34.14 **(WSDOT NW Region Project)**	$15,423	$1,300	$14,123

Source: WSDOT - Office of Urban Mobility, Financially Unconstrained Six Year Potential Projects, Draft, 7/8/96
(all costs shown in $1,000)

8.2 Long Term Mobility Improvement Projects

Mobility Improvement projects not identified in this RDP as short term are shown below, categorized as long term projects. They are recommended to be completed within the next 7-20 years. They are included in the financially constrained *Highway System Plan*. Presently these sections experience poor peak period levels of service, below the target LOS D or better for Urban Areas. But these projects are not included in the current Six Year Plan.

State Route 161 Long Term
Recommended Mobility Projects
Graham Vicinity to King County Line

Project Description	Estimated Cost
176th St E to SR 512 I/C MP 21.36 to 25.85 Urban access control &/or local arterial.	$8.10 to $10.80 Million
Valley Ave to NB Climbing Lane MP 28.80 to 29.53 Widen to 4 lanes	$5.10 to $6.80 Million

Source: WSDOT - State highway System Plan 1997-2016,

8.3 Safety Improvement Projects

The Safety Improvement projects discussed in Section 5 of this RDP are shown below with their respective estimated costs.

State Route 161
Recommended Safety Projects
Graham Vicinity to King County Line

Project Description	Estimated Cost
244th St E Vic to 176th St E MP 17.00 to 21.36, HAC Included in constrained mobility solution and cost estimate	$0.00 (could be short range improvement if combined with recommended Mobility project)
176th St E Vic MP 21.32 to 21.33, Risk, Included in Accident Reduction or Mobility improvement	$0.00 (could be short range improvement if combined with recommended Mobility project)
176th St E to 132nd St E MP 21.36 to 24.00, HAC, Miscellaneous Access Treatments	$ 2.38 to $3.17 Million
Meridian St to SR 512 I/C EB Ramps MP 25.66 to MP 25.75, Risk, No Action (Puyallup) 35 MPH Signal Controlled or included in mobility improvement cost estimate	$0.00
RR O-xing Vic to 36th St E MP 29.38 to MP 30.38, Risk, Included in Accident Reduction or Mobility Improvement.	$0.00
Dechaux Rd E to 36th St E Vic MP 29.50 to MP 30.30, HAC, Cross-section/Geometric improvements, miscellaneous access treatments	$1.33 to $1.77 Million
36th St E Vic to 16th/18th St E Vic MP 30.30 to MP 31.50, HAC, Programmed project and included in constrained mobility solution	$0.00
Military Rd Intersection Vic MP 32.45 to MP 32.53, Risk, Cross section/Geometric Improvements	$0.07 to $0.10 Million

8.4 Environmental Retrofit Projects

The Environmental Retrofit projects discussed in Section 5 of this RDP are shown below with their respective estimated costs.

State Route 161
Recommended Environmental Retrofit Projects
Graham Vicinity to King County Line

Project Description	Estimated Cost
MP 20.06, Storm Water, Improve storm water runoff control-Potential solutions: Dry Pond. Note: Estimated cost does not include R/W acquisition if needed.	$0.08 to $0.11 Million
MP 25.40, Storm Water, Improve storm water runoff control - potential solutions: Wet /Vault. Note: Estimated cost does not include R/W acquisition if needed	$0.28 to $0.38 Million
MP 29.45, Storm Water, Improve storm water runoff control - potential solutions: Wet /Vault. Note: Estimated cost does not include R/W acquisition if needed	$0.03 to $0.04 Million

Source: WSDOT State Highway System Plan, 1997-2016

Appendix A Accident History and Analysis

Information regarding recent traffic accident data for SR 161 was prepared by the WSDOT Planning and Programming Service Center, Transportation Data Office in Olympia, Washington. The accident information is presented through a series of tables on the following pages. The information provided in these summary tables may be used to determine leading causes of accidents, accident rates, and conditions of the roadway during the accidents.

Washington State Department of Transportation

Memorandum

Date: May 10, 1996

From: Ralph Wessels/Brian Limotti
Phone: 753-6182 / 753-2935

Accident Data

To: Chris Schroedel
Olympic Region
Mail Stop: WA-48

In response to your April 20 request for the highway segments you specified, we have prepared accident rates (including critical rates) and comparisons of leading collision types, objects struck, driver 1 first contributing cause, road surface, alcohol involvement, most severe injury, month of accident and day of week of accident with the 1994 Traffic Accident Profile (*TAP*). The *TAP* figures we used for comparison purposes were for non-interstate highways within the Olympic Region. This data covered the period from January 1, 1990 through October 31, 1995 and was for the following areas:

- (Site 1) SR 161 at 234th Avenue to 176th Avenue (MP 17.58 to 21.35)
- (Site 2) SR 161 at 176th to 128th (MP 21.36 to 24.23)
- (Site 3) SR 161 at 128th to SR 512 Interchange (MP 24.24 to 25.85)
- (Site 4) SR 161 at Valley Avenue/SR 167 on/off ramps to 36th (MP 28.73 to 30.34)
- (Site 5) SR 161 at 36th to King County Line (MP 30.35 to 32.55)
- (Site 6) SR 162 at SR 410 Interchange to Military Road (MP 0.00 to 5.35)
- (Site 7) SR 162 at Military Road to Oroville Road (MP 5.36 to 10.97)
- (Site 8) SR 162 at Oroville Road to SR 165 Wye Connection (MP 10.98 to 19.78)
- (Site 9) SR 410 at SR 167 Interchange to Myers Road (MP 8.84 to 13.13)
- (Site 10) SR 410 at Myers Road to 214th (MP 13.14 to 15.60)
- (Site 11) SR 410 at 214th to Hinkleman Ext. Road (MP 15.61 to 20.40)
- (Site 12) SR 410 at Hinkleman Ext, Road to King County Line (MP 20.41 to MP 22.02)

There was insufficient traffic volume data to calculate accident rates for 1995. 40 hours of staff time needed to respond to this request has been charged to PL 6133 01 0525. If we can be of any further help, please contact Brian Limotti at 360 753-2935.

RLW:kw
BTL
Attachments

SR 161 MP 17.58 to 21.35
234TH Avenue to 176TH Avenue

SITE # 1

Leading Collision Types	1/1/90 to 10/31/95 %	[illegible] %
REAR END, SD 1 STP	30.4	24.7
DRIVEWAY ENTERING	11.6	4.2
REAREND, SD, BM	10.8	7.2
VEH HIT FIX OBJ	10.8	17.4
DRIVEWAY LEAVING	8.8	4.6
ENTER AT ANGLE	8.0	11.0

Leading Objects Struck		
DITCH	30.8	12.2
EARTH BANK	15.4	13.8

Surface Conditions		
Dry	66.6	64.6
Wet	31.2	28.7
Ice	2.2	5.7
Snow	0.0	1.0

Weekday	1/1/90 to 10/31/95 %	[illegible] %
MON	15.5	14.1
TUES	11.0	14.7
WED	14.1	14.0
THUR	10.2	14.4
FRI	16.9	17.2
SAT	17.1	15.0
SUN	15.2	10.7

Driver 1 Leading Contributing Causes		
EXCEED SAFE SPEED	28.8	22.0
FOLLOW TOO CLOSE	18.8	15.3
FAIL TO YIELD ROW	16.9	16.7
UND INFL OF ALCOHOL	13.8	7.3
INATTENT/ASLEEP	8.1	9.0
IMPROPER PASS	5.8	1.4
OVER CENTER LINE	2.7	1.3

Alcohol Involvement		
HBD ABILITY IMP	10.5	6.8
HBD ABILITY NOT IMP	1.4	1.7
HBD SOB UNKNOWN	1.4	1.6
HAD NOT BN DRNKNG	68.2	69.2
UNKNOWN	1.4	20.8

Most Severe Injury		
NO INJURY	50.0	54.1
POSSIBLE INJ	28.5	26.5
EVIDENT INJ	16.9	15.3
DISABLING	4.4	3.5
DEAD	0.3	0.6

Month of Accident	1/1/90 to 10/31/95 %	[illegible] %
JAN	8.0	6.6
FEB	9.9	8.2
MAR	8.0	7.9
APR	6.1	7.1
MAY	7.2	7.4
JUN	10.2	8.1
JUL	8.6	8.4
AUG	9.1	8.2
SEPT	8.8	8.4
OCT	12.2	9.5
NOV	5.0	9.6
DEC	6.9	10.6

This area has an avg. accident rate below that of the accident rate for urban minor arterials.

Leading collision type involved rearend accidents with one vehicle , 5.7% over the TAP. There were 110 accidents in the study that fit this description.

The leading object struck, ditches, was 18.6% over the TAP, comprising 12 of the 39 accidents in the study in which an object was struck.

SR:	161	234th AVENUE to 176TH AVENUE				
FROM MP:	17.58	*TO MP:*	21.35	*LENGTH:*	3.77 MILES	

	1990	1991	1992	1993	1994	1995
NUMBER OF ACCIDENTS	53	61	49	74	64	61
ANNUAL AVERAGE DAILY TRAFFIC	18,600	20,100	21,100	17,400	18,400	N/A+
NUMBER OF DAYS	365	365	365	365	365	365
ACCIDENT RATE PER MVM*	2.1	2.2	1.7	3.1	2.5	N/A+
AVERAGE ACCIDENT RATE PER MVM* FOR COMPARABLE STATE HIGHWAYS *URBAN MINOR ARTERIAL*	3.2	3.0	2.8	3.3	3.2	N/A+
CRITICAL RATE**	3.7	3.5	3.3	3.9	3.8	N/A+

*Million Vehicle Miles

+ Not Available

**The critical rate is a statistically derived value that is used to determine the level the accident rate at a specific location must exceed for that location to be termed a critical location. It is based on comparing the accident rate at a specific location with the average accident rate for comparable types of highways.

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TRANSPORTATION DATA OFFICE

SR 161 MP 21.36 to 24.23
176th to 128th

SITE # 2

Leading Collision Types	1/1/90 to 10/31/95 %	[illegible] %
REAREND, SD 1 STP	**38.0**	**24.7**
REAREND, SD, BM	**13.5**	**7.2**
ENTER AT ANGLE	**9.2**	**11.0**
DRIVEWAY LEAVING	**8.5**	**4.6**
LEFT TRN, OD, 1 STR	**5.5**	**4.3**
SDSWIPE SD BM	**5.0**	**4.9**

Leading Objects Struck		
LUMINAIRE	**35.7**	**2.2**

Surface Conditions		
Dry	**70.7**	**64.6**
Wet	**26.5**	**28.7**
Ice	**1.6**	**5.7**
Snow	**1.1**	**1.0**

Weekday	1/1/90 to 10/31/95 %	[illegible] %
MON	**19.0**	**14.1**
TUES	**13.0**	**14.7**
WED	**14.9**	**14.0**
THUR	**15.1**	**14.4**
FRI	**15.8**	**17.2**
SAT	**13.7**	**15.0**
SUN	**8.5**	**10.7**

Driver 1 Leading Contributing Causes		
FOLLOW TOO CLOSE	**25.5**	**15.3**
FAIL TO YIELD ROW	**23.2**	**16.7**
EXCEED SAFE SPEED	**22.1**	**22.0**
UND INFL OF ALCOHOL	**11.8**	**7.3**
DISREGARD SIGNAL	**5.2**	**3.3**
INATTENT/ASLEEP	**4.1**	**9.0**
IMPROPER TURN	**1.8**	**1.9**

Alcohol Involvement		
HBD ABILITY IMP	**8.9**	**6.8**
HBD ABILITY NOT IMP	**1.1**	**1.7**
HBD SOB UNKOWN	**0.2**	**1.6**
HAD NOT BN DRNKING	**68.2**	**69.2**
UNKNOWN	**21.5**	**20.8**

Most Severe Injury		
NO INJURY	**52.6**	**54.1**
POSSIBLE INJ	**30.9**	**26.5**
EVIDENT INJ	**12.6**	**15.3**
DISABLING	**3.7**	**3.5**
DEAD	**0.2**	**0.6**

Month of Accident	1/1/90 to 10/31/95 %	[illegible] %
JAN	**7.8**	**6.6**
FEB	**8.0**	**8.2**
MAR	**10.8**	**7.9**
APR	**7.6**	**7.1**
MAY	**7.3**	**7.4**
JUN	**10.8**	**8.1**
JUL	**8.2**	**8.4**
AUG	**9.6**	**8.2**
SEPT	**6.2**	**8.4**
OCT	**10.8**	**9.5**
NOV	**5.7**	**9.6**
DEC	**7.3**	**10.6**

This area has an average accident rate below that of the average accident rate for urban minor arterials.

Leading collision type involved rearend accidents with one vehicle stopped, 13.3% over the TAP. There were 166 accidents in the study that fit this description.

69 of the total accidents for this study involved drivers who were following too close, 10.2% above the TAP.

SR:	161	176th to 128th				
FROM MP:	21.36	*TO MP:*	24.23	*LENGTH:*	2.87 MILES	

	1990	1991	1992	1993	1994	1995
NUMBER OF ACCIDENTS	58	65	71	71	93	79
ANNUAL AVERAGE DAILY TRAFFIC	25,500	27,500	29,200	29,200	31,200	N/A+
NUMBER OF DAYS	365	365	365	365	365	365
ACCIDENT RATE PER MVM*	2.2	2.3	2.3	2.3	2.8	N/A+
AVERAGE ACCIDENT RATE PER MVM* FOR COMPARABLE STATE HIGHWAYS *URBAN MINOR ARTERIAL*	3.2	3.0	2.8	3.3	3.2	N/A+
CRITICAL RATE**	3.7	3.5	3.3	3.9	3.7	N/A+

*Million Vehicle Miles
+ Not Available
**The critical rate is a statistically derived value that is used to determine the level the accident rate at a specific location must exceed for that location to be termed a critical location. It is based on comparing the accident rate at a specific location with the average accident rate for comparable types of highways.

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lay-

SR 161 MP 24.24 to 25.85
128TH to SR 512 Interchange

SITE # 3

Leading Collision Types	1/1/90 to 10/31/95 %	
REAREND, SD, 1 STP	45.9	24.7
DRIVEWAY LEAVING	12.1	4.6
REAREND, SD, BM	9.6	7.2
ENTER AT ANGLE	9.5	11.0
SIDESWIPE, SD, BM	7.9	4.9
DRIVEWAY ENTER	3.4	4.2

Leading Objects Struck		
TREE OR STUMP	25.0	8.8

Surface Conditions		
Dry	68.9	64.6
Wet	30.4	28.7
Ice	0.5	5.7
Snow	0.2	1.0

Weekday	1/1/90 to 10/31/95 %	
MON	14.9	14.1
TUES	13.6	14.7
WED	14.5	14.0
THUR	14.5	14.4
FRI	19.0	17.2
SAT	15.4	15.0
SUN	8.1	10.7

Driver 1 Leading Contributing Causes		
FOLLOW TOO CLOSE	29.8	15.3
FAIL TO YIELD ROW	27.1	16.7
EX SAFE SPEED	19.5	22.0
DISREGARD SIGNAL	6.7	3.3
UND INFL OF ALCOHOL	4.5	7.3
INATTENT/ASLEEP	4.1	9.0
IMPROPER TURN	2.4	1.9

Alcohol Involvement		
HBD ABILITY IMP	3.2	6.8
HBD ABILITY NOT IMP	1.3	1.7
HBD SOB UNKOWN	1.1	1.6
HAD NOT BN DRINKG	64.9	69.2
UNKNOWN	29.6	20.8

Most Severe Injury		
NO INJURY	51.9	54.1
POSSIBLE INJ	37.3	26.5
EVIDENT INJ	9.5	15.3
DISABLING	1.4	3.5
DEAD	0.0	0.6

Month of Accident	1/1/90 to 10/31/95 %	
JAN	8.1	6.6
FEB	7.1	8.2
MAR	7.7	7.9
APR	9.1	7.1
MAY	7.7	7.4
JUN	6.8	8.1
JUL	8.1	8.4
AUG	10.0	8.2
SEPT	9.6	8.4
OCT	10.7	9.5
NOV	8.6	9.6
DEC	6.4	10.6

This area has an accident rate more than twice that of the avg. accident rate for urban minor arterials.

Leading collision type involved rearend accidents with one vehicle stopped; 21.2% over the TAP. There were 476 accidents in the study that fit this description.

197 accidents, nearly twice the percentage of the TAP, were contributed to following too close.

SR:	161	128th to SR 512 INTERCHANGE				
FROM MP:	24.24	*TO MP:*	25.85	*LENGTH:*	1.61 MILES	
	1990	1991	1992	1993	1994	1995
NUMBER OF ACCIDENTS	155	166	154	174	214	174
ANNUAL AVERAGE DAILY TRAFFIC	33,700	35,900	37,200	39,600	41,800	N/A+
NUMBER OF DAYS	365	365	365	365	365	365
ACCIDENT RATE PER MVM*	7.8	7.9	7.0	7.5	8.7	N/A+
AVERAGE ACCIDENT RATE PER MVM* FOR COMPARABLE STATE HIGHWAYS *URBAN MINOR ARTERIAL*	3.2	3.0	2.8	3.3	3.2	N/A+
CRITICAL RATE**	3.8	3.6	3.4	3.9	3.8	N/A+

*Million Vehicle Miles

+ Not Available

**The critical rate is a statistically derived value that is used to determine the level the accident rate at a specific location must exceed for that location to be termed a critical location. It is based on comparing the accident rate at a specific location with the average accident rate for comparable types of highways.

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10-May-96

SR 161 MP 28.73 to 30.34
Valley Avenue/ SR 167 to 36th

SITE # 4

Leading Collision Types	1/1/90 to 10/31/95 %	[illegible] %
REAREND, SD 1 STP	40.5	24.7
VEH HIT FIXED OBJ	17.9	17.4
ENTER AT ANGLE	7.9	11.0
REAREND, SD, BM	7.9	7.2
SIDESWIPE, OD, BM	4.7	1.1
OD ALL OTHER	3.2	1.3

Leading Objects Struck		
NOT THRU GRDRAIL	29.4	12.1
EARTH BANK	20.6	13.8

Surface Conditions		
Dry	64.2	64.6
Wet	34.7	28.7
Ice	0.5	5.7
Snow	0.5	1.0

Weekday	1/1/90 to 10/31/95 %	[illegible] %
MON	10.5	14.1
TUES	15.8	14.7
WED	12.1	14.0
THUR	15.8	14.4
FRI	16.3	17.2
SAT	20.0	15.0
SUN	9.5	10.7

Driver 1 Leading Contributing Causes		
EX SAFE SPEED	42.0	22.0
FOLLOW TOO CLOSE	17.6	15.3
UND INFL OF ALCOHOL	8.4	7.3
DISREGARD SIGNAL	8.4	3.3
EXCEED SPEED LIMIT	7.6	1.3
INATTENT/ASLEEP	5.3	9.0
FAIL TO YIELD ROW	3.8	16.7

Alcohol Involvement		
HBD ABILITY IMP	6.3	6.8
HBD ABILITY NOT IMP	1.6	1.7
HBD SOB UNKOWN	2.1	1.6
HAD NOT BN DRINKNG	65.8	69.2
UNKNOWN	24.2	20.8

Most Severe Injury		
NO INJURY	53.2	54.1
POSSIBLE INJ	29.5	26.5
EVIDENT INJ	13.2	15.3
DISABLING	3.2	3.5
DEAD	1.1	0.6

Month of Accident	1/1/90 to 10/31/95 %	[illegible] %
JAN	5.8	6.6
FEB	6.3	8.2
MAR	11.6	7.9
APR	9.5	7.1
MAY	6.8	7.4
JUN	7.9	8.1
JUL	7.4	8.4
AUG	6.3	8.2
SEPT	15.8	8.4
OCT	7.4	9.5
NOV	8.4	9.6
DEC	6.8	10.6

This area has an accident rate somewhat higher than the avg. accident rate for urban minor arterials.

Leading collision type involved rearend accidents in which one of the vehicles was stopped; 15.8% over the TAP. There were 77 accidents in this study that fit this description.

42% of the accidents were contributed to exceeding safe speed. This was 20% over the TAP and contributed to 55 of the accidents in this study.

SR:	161	VALLEY AVENUE/ SR 167 TO 36th				
FROM MP:	28.73	*TO MP:*	30.34	*LENGTH:*	1.61 MILES	

	1990	1991	1992	1993	1994	1995
NUMBER OF ACCIDENTS	34	26	27	39	37	27
ANNUAL AVERAGE DAILY TRAFFIC	15,400	14,100	15,500	16,900	15,300	N/A+
NUMBER OF DAYS	365	365	365	365	365	365
ACCIDENT RATE PER MVM*	3.8	3.1	3.0	3.9	4.1	N/A+
AVERAGE ACCIDENT RATE PER MVM* FOR COMPARABLE STATE HIGHWAYS *URBAN MINOR ARTERIAL*	3.2	3.0	2.8	3.3	3.2	N/A+
CRITICAL RATE**	4.1	3.9	3.7	4.2	4.1	N/A+

*Million Vehicle Miles
+ Not Available
**The critical rate is a statistically derived value that is used to determine the level the accident rate at a specific location must exceed for that location to be termed a critical location. It is based on comparing the accident rate at a specific location with the average accident rate for comparable types of highways.

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SR 161 MP 30.35 to 32.55
36th to King County Line

SITE # 5

Leading Collision Types	1/1/90 to 10/31/95 %	[illegible] %
REAREND, SD 1 STP	34.6	24.7
ENTER AT ANGLE	15.0	11.0
DRIVEWAY LEAVING	11.2	4.6
DRIVEWAY ENTERING	10.9	4.2
REAREND, SD, BM	8.5	7.2
LEFT TURN, OD, 1 STR	6.5	4.3

Leading Objects Struck		
UTILITY POLE	28.0	5.9

Surface Conditions		
Dry	70.3	64.6
Wet	28.8	28.7
Ice	0.7	5.7
Snow	0.2	1.0

Weekday	1/1/90 to 10/31/95 %	[illegible] %
MON	12.5	14.1
TUES	14.7	14.7
WED	14.7	14.0
THUR	15.2	14.4
FRI	19.6	17.2
SAT	14.5	15.0
SUN	8.7	10.7

Driver 1 Leading Contributing Causes		
FAIL TO YIELD ROW	26.4	16.7
FOLLOW TOO CLOSE	23.3	15.3
EXCEED SAFE SPEED	16.8	22.0
UND INFL OF ALCOHOL	8.2	7.3
DISREGARD SIGNAL	8.2	3.3
IMPROPER PASS	6.2	1.4
INATTENT/ASLEEP	5.1	9.0

Alcohol Involvement		
HBD ABILITY IMP	6.0	6.8
HBD ABILITY NOT IMP	1.3	1.7
HBD SOB UNKOWN	0.9	1.6
HAD NOT BN DRINKG	66.7	69.2
UNKNOWN	25.0	20.8

Most Severe Injury		
NO INJURY	49.3	54.1
POSSIBLE INJ	35.3	26.5
EVIDENT INJ	12.7	15.3
DISABLING	2.7	3.5
DEAD	0.0	0.6

Month of Accident	1/1/90 to 10/31/95 %	[illegible] %
JAN	6.3	6.6
FEB	8.7	8.2
MAR	8.9	7.9
APR	10.9	7.1
MAY	8.3	7.4
JUN	7.8	8.1
JUL	4.5	8.4
AUG	7.6	8.2
SEPT	10.0	8.4
OCT	8.9	9.5
NOV	9.2	9.6
DEC	8.9	10.6

This area has an accident rate somewhat higher than the accident rate for urban monor arterials.

Leading collision type involved rearend accidents in which one of the vehicles was stopped; 9.9% over the TAP. There were 155 accidents in this study that fit this description.

26.4% of the accidents were contributed to failure to yield right of way. This was 9.7% over the TAP and contributed to 77 of the accidents in this study.

	SR:	161		36th to KING COUNTY LINE		
	FROM MP:	30.35	*TO MP:*	32.55	*LENGTH:*	2.20 MILES

	1990	1991	1992	1993	1994	1995
NUMBER OF ACCIDENTS	89	68	84	64	85	58
ANNUAL AVERAGE DAILY TRAFFIC	16,800	17,600	18,100	19,000	19,200	N/A+
NUMBER OF DAYS	365	365	365	365	365	365
ACCIDENT RATE PER MVM*	6.6	4.8	5.8	4.2	5.5	N/A+
AVERAGE ACCIDENT RATE PER MVM* FOR COMPARABLE STATE HIGHWAYS *URBAN MINOR ARTERIAL*	3.2	3.0	2.8	3.3	3.2	N/A+
CRITICAL RATE**	3.9	3.7	3.5	4.1	3.9	N/A+

*Million Vehicle Miles

+ Not Available

**The critical rate is a statistically derived value that is used to determine the level the accident rate at a specific location must exceed for that location to be termed a critical location. It is based on comparing the accident rate at a specific location with the average accident rate for comparable types of highways.

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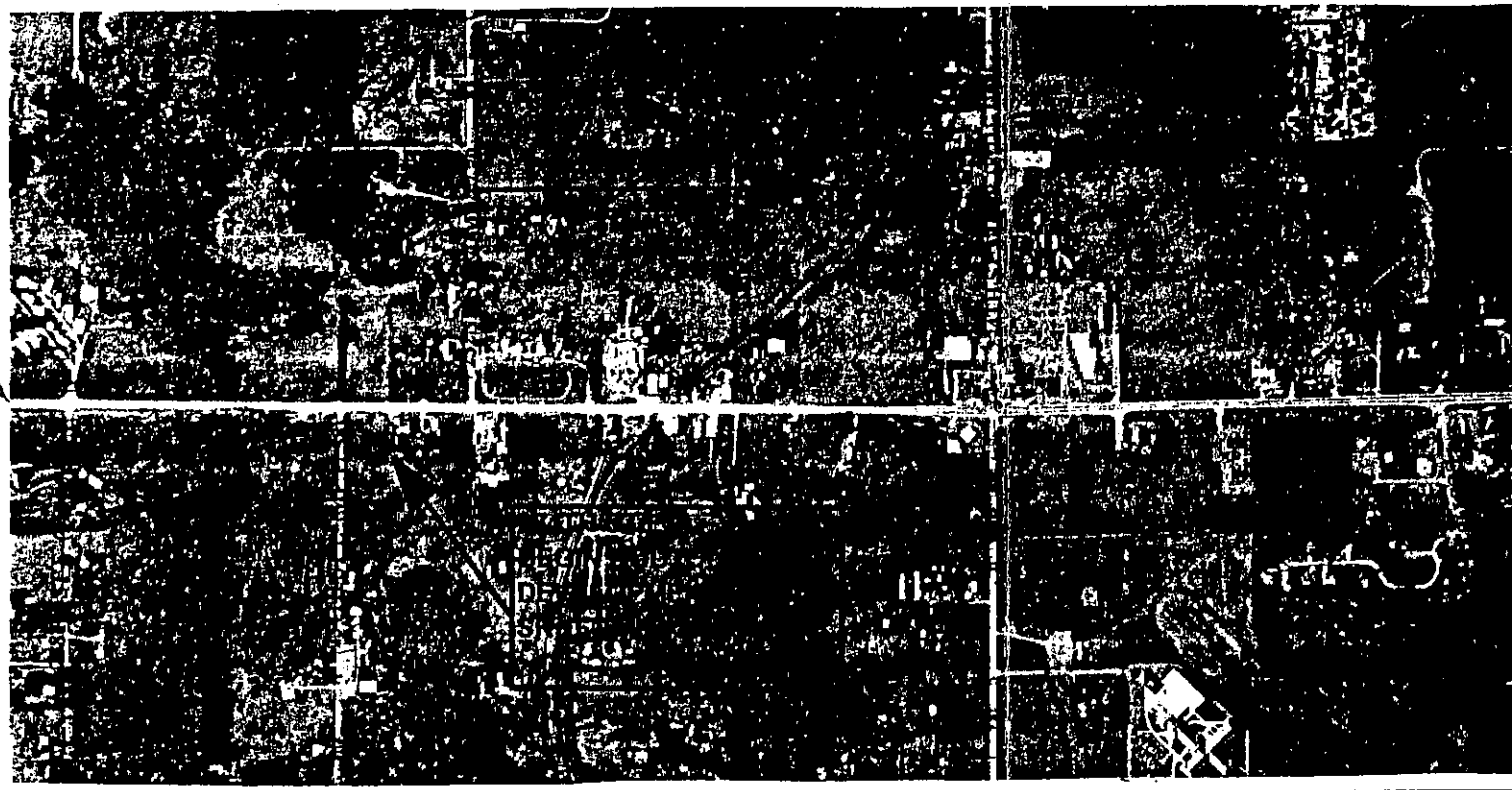
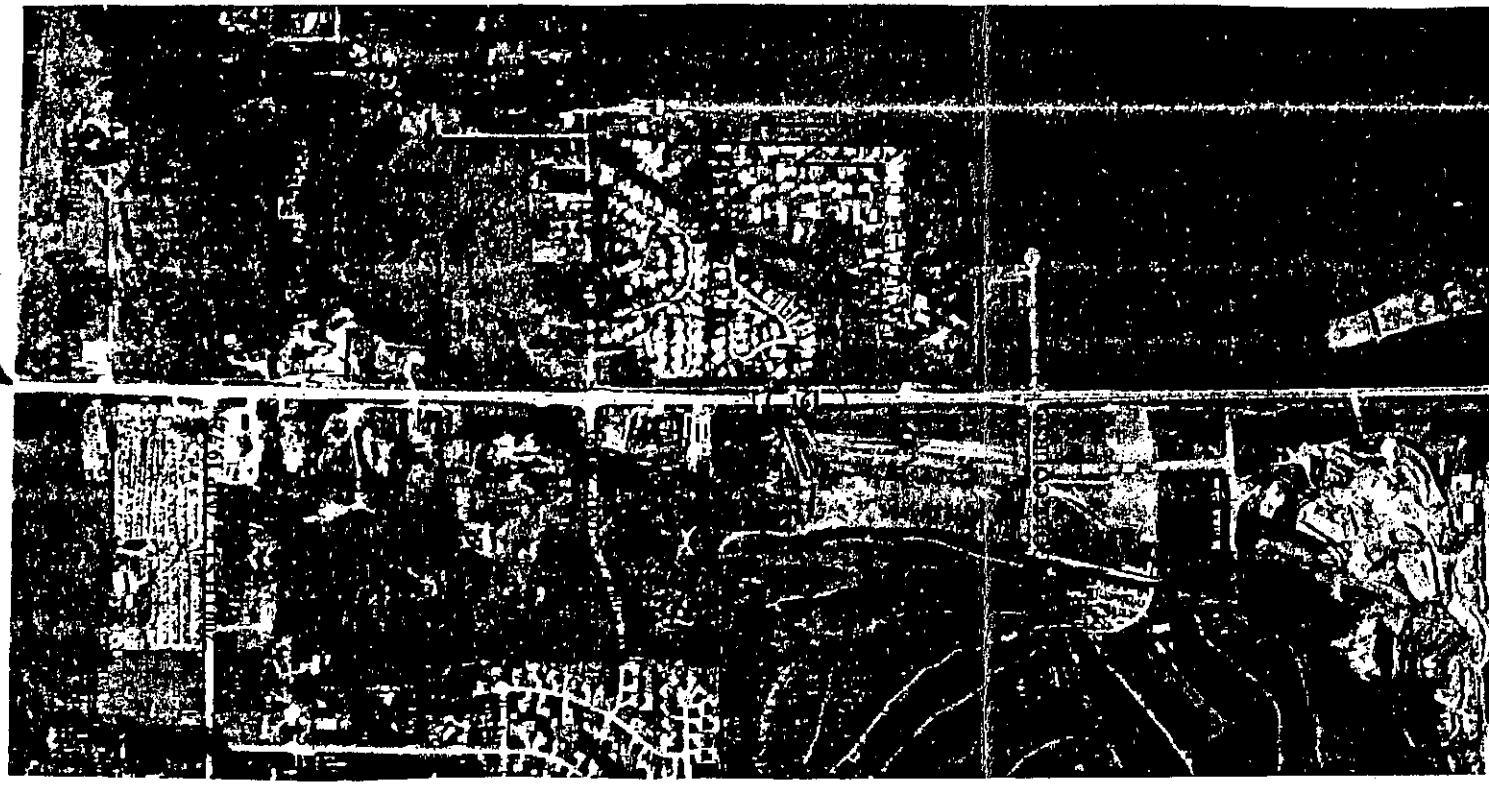


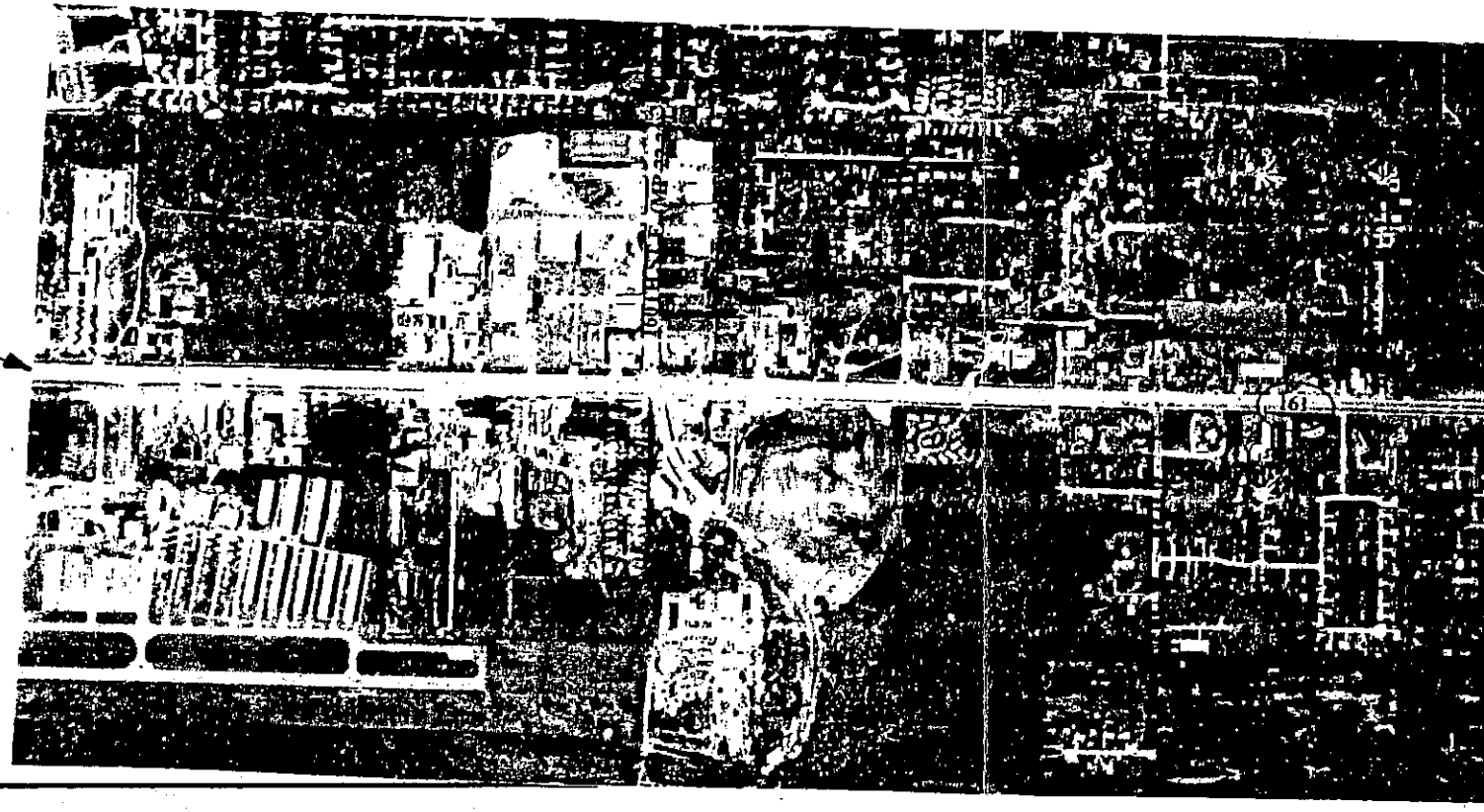
MILEPOST AND LANDMARKS	MP 17.24	PVT. RD MP 17.32 238TH ST. E.	MP 17.70 232ND ST. E. MP 17.58 234th St E.	MP 17.83 229TH ST. E.	MP 18.21 224th ST E.	P.C. FAIRGROUNDS MP 18. EUSTIS
FUNCTIONAL CLASS		MINOR ARTERIAL (FEDERAL) RURAL - MINOR ARTERIAL (STATE)	MP 17.69		PRINCIPAL ARTERIAL (FEDERAL) URBAN - MINOR ARTERIAL (STATE)	
ACCESS MANAGEMENT PLAN CLASS AND LIMITED ACCESS MASTER PLAN		CLASS 2	MP 17.58	CLASS 3	MP 18.64 NONE	
EXISTING TRAVELED WAY EXISTING ROADWAY WIDTH		TYPICALLY 11 FT LANES WITH 4FT SHOULDERS (30 FT TYP.)		MP 18.12		TYPICALLY 11 FT LAN
PROPOSED TRAVELED WAY PROPOSED ROADWAY WIDTH		MP 17.56 VIC.	(4) 12FT LANES AND TWLTL			

	MP 17.24			MP 18.26	75 FT LT 30 FT RT MP 18.29
EXISTING RIGHT-OF-WAY	30 FT LEFT AND 30 FT RIGHT (TOTAL R/W WIDTH 60 FT)				75 FT LEFT AND
PROPOSED RIGHT-OF-WAY	UNCHANGED	MP 17.56	TO BE DETERMINED IN PRELIMINARY ENGINEERING PHASE OF PROGRAMMED PROJECT (DESIGN)		UNCHAN
1995 AVERAGE DAILY TRAFFIC (ADT)		11000	12000 (9096)		(18618)
TRUCK PERCENTAGE (INCLUDES RV'S)			8.4%		9.7%
PROJECTS IN 6 YEAR PLAN	GRAHAM HILL VICINITY TRUCK CLIMBING LANES	"234TH STREET E. TO 204TH STREET E." WIDEN FROM 2 TO 4 LANE FA			
CONSTRUCTION BIENNIUM	1995 TO 1997	UNKNOWN - CONSTRUCTION NOT FUND			
LONG RANGE MOBILITY NEEDS	RECENT CONTRACT 4640	WIDEN TO 4/5 LANE FACILITY BETWEEN MP 17.56 TO MP 21.3			
EXISTING TRAFFIC SIGNALS				MP 18.21	
PROPOSED TRAFFIC SIGNALS		MP 17.70 232ND ST. E.		224TH ST E.	
COLLISION REDUCTION CORRIDORS (HAC)	MP 17.00 TO MP 21.36 (HAC) - ADDRESS ACCIDENTS IN CONSTRAINED MOBILITY PROJECTS "234TH STREE				
COLLISION PREVENTION LOCATIONS (RISK)				NONE	
EXISTING NON-MOTORIZED FACILITIES			CLASS IV BIKEWAY (4 TO 8 FT SHOULDERS)		
PROPOSED NON-MOTORIZED FACILITIES		PAVED SHOULDERS AND SIDEWALKS AS DEVELOPMENTS INCREASE AND			
EXISTING TRANSIT FACILITIES				WEEKDAY TRANSIT STOP 224TH ST E.	
KNOWN PROPOSED TRANSIT FACILITIES				NONE IDENTIFIED YET	
EXISTING PARK & RIDE LOTS				NONE	
PROPOSED PARK & RIDE LOTS				NONE	



	MP 19.49		MP 20.08	MP 20.52
MILEPOST AND LANDMARKS		MP 19.72 200th St. E.	194th St. E.	187th St E.
FUNCTIONAL CLASS	PRINCIPAL ARTERIAL (FEDERAL) URBAN - MINOR ARTERIAL (STATE)			
ACCESS MANAGEMENT PLAN CLASS AND LIMITED ACCESS MASTER PLAN	CLASS 2 (MP 18.64 TO MP 21.20) NONE			
EXISTING TRAVELED WAY EXISTING ROADWAY WIDTH	TYPICALLY (2) 11 TO 12 FT LANES WITH 8 FT SHOULDERS (38FT TO 40 FT)			
PROPOSED TRAVELED WAY PROPOSED ROADWAY WIDTH	(4) 12FT LANES, MEDIAN BARRIER WITH SELECTED LEFT TURN CH (68 FT TO 80 FT)			

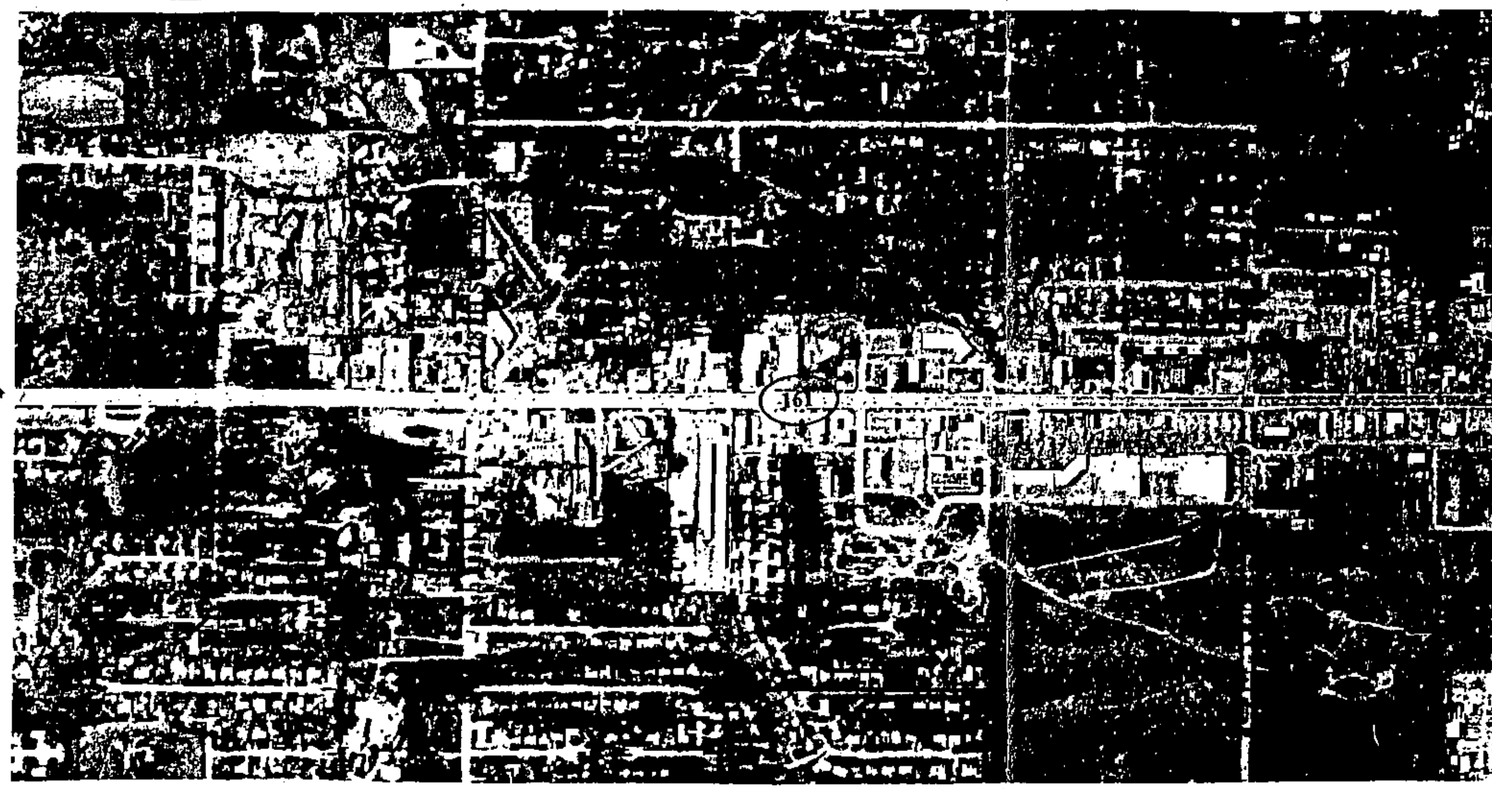
EXISTING RIGHT-OF-WAY	75 FT LEFT AND 75 FT RIGHT (TOTAL R/W WIDTH 150FT)
PROPOSED RIGHT-OF-WAY	NO ADDITIONAL RIGHT OF WAY PROPOS
1995 AVERAGE DAILY TRAFFIC (ADT)	12000 (17967) (18191) (21419) (21856) (22260)
TRUCK PERCENTAGE (INCLUDES RV'S)	10% 5.8% 3.3% 3% 7.7%
PROJECTS IN 6 YEAR PLAN	204TH STREET TO 176TH STREET (WIDEN EXISTING 2 LANE TO A 4 LANE WITH BARRIER FACILITY) PE IN 1995 to
CONSTRUCTION BIENNIUM	UNKNOWN – CONSTRUCTION NOT FUNDED
LONG RANGE MOBILITY NEEDS	WIDEN TO 4/5 LANE FACILITY BETWEEN MP 17.56 TO MP 21.36 VICINITY (WITH BA
EXISTING TRAFFIC SIGNALS	"EMERGENCY" MP 20.52 187th St E.
PROPOSED TRAFFIC SIGNALS	MP 19.72 200th St. E. / MP 20.08 194th St. E. / MP 20.52 187th St E.
COLLISION REDUCTION CORRIDORS (HAC)	MP 17.00 TO MP 21.36 (HAC) – ADDRESS ACCIDENTS IN CONSTRAINED MOBILITY PROJECT "204TH STREET TO 176TH S
COLLISION PREVENTION LOCATIONS (RISK)	
EXISTING NON-MOTORIZED FACILITIES	CLASS IV BIKEWAY (8FT SHOULDERS)
PROPOSED NON-MOTORIZED FACILITIES	PAVED SHOULDERS AND SIDEWALKS AS DEVELOPMENTS INCREASE AND/OR CONSTRUCT PAVED SEPARATED PATHS NEAR R
EXISTING TRANSIT FACILITIES	NO EXISTING PULLOUTS
KNOWN PROPOSED TRANSIT FACILITIES	NONE IDENTIFIED YET
EXISTING PARK & RIDE LOTS	NONE
PROPOSED PARK & RIDE LOTS	NONE



MILEPOST AND LANDMARKS	MP 22.22 160th St. E	MP 22.73 152nd St. E.
FUNCTIONAL CLASS	PRINCIPAL ARTERIAL (FEDERAL) URBAN-MINOR ARTERIAL (STATE)	
ACCESS MANAGEMENT PLAN CLASS AND LIMITED ACCESS MASTER PLAN	CLASS 3 (MP 21.20 to MP 25.39) PLANNED MODIFIED (MP 21.39 to MP 25.39)	
EXISTING TRAVELED WAY EXISTING ROADWAY WIDTH	5- 12 FT LANES WITH 6 FT SHOULDERS VARIES 72FT TO 82FT WITH WALKWAYS	MP 22.73 5- 11 FT LANE 7
PROPOSED TRAVELED WAY PROPOSED ROADWAY WIDTH	SAME AS EXISTING (SEE ABOVE) SAME AS EXISTING (SEE ABOVE)	- SEE

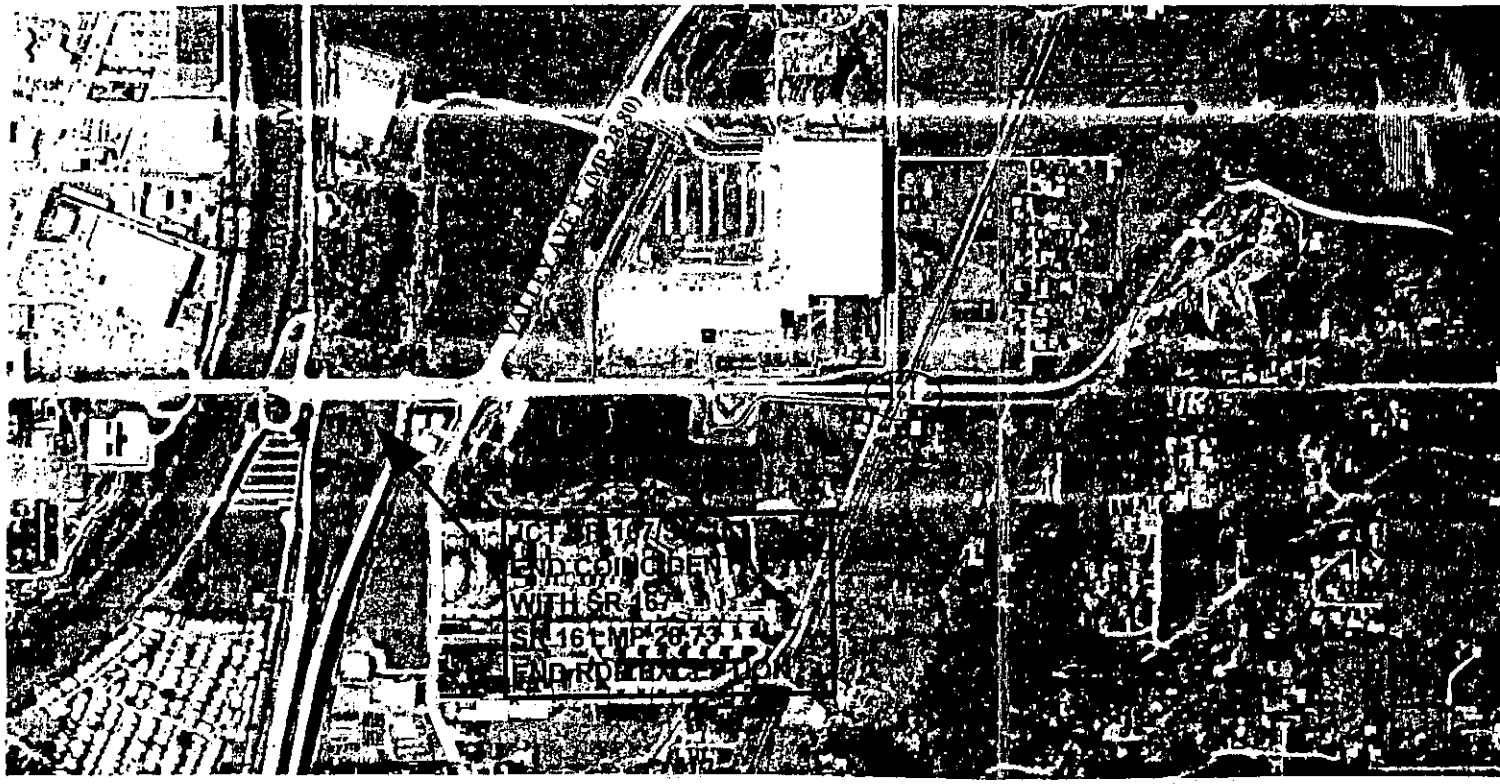
	MP 21.57		MP 22.73
EXISTING RIGHT-OF-WAY		75FT LT AND 75 FT RT (TOTAL 150 FT)	TYP. 50 FT LT A
PROPOSED RIGHT-OF-WAY		NO ADDITIONAL RIGHT-OF-WAY PROPOSED	
1995 AVERAGE DAILY TRAFFIC (ADT)	(25345)		(24645)
TRUCK PERCENTAGE (INCLUDES RV'S)			
PROJECTS IN 6 YEAR PLAN		NONE	
CONSTRUCTION BIENNIUM			
LONG RANGE MOBILITY NEEDS		"PENDING REGIONAL AND LOCAL DISCUSSIONS. URBAN AC	
EXISTING TRAFFIC SIGNALS		MP 22.22 160th St. E.	MP 22.73 152nd St. E.
PROPOSED TRAFFIC SIGNALS			
COLLISION REDUCTION CORRIDORS (HAC)		MISCELLANEOUS ACCESS TREATMENTS (HAC) MP 21.36 TO MP 24	
COLLISION PREVENTION LOCATIONS (RISK)			
EXISTING NON-MOTORIZED FACILITIES		CLASS IV BIKEWAY 5FT WALKWAY (RT) SEPARATED (AND ADJOINING SR16) MP 22.17 5 FT WALKWAY/BIKEWAY (BOTH SIDES) MP 22.22	MP 22.73 (BOTH SIDES) SEPARATED WALKWAY/BIKEWAY 4 to
PROPOSED NON-MOTORIZED FACILITIES		CONSIDER SIDEWALKS AS DEVELOPMENT INCREASES	
EXISTING TRANSIT FACILITIES		TRANSIT STOP	BUS PULLOUT (LEFT) BUS P (LEF
KNOWN PROPOSED TRANSIT FACILITIES			
EXISTING PARK & RIDE LOTS		39 Stalls MP 22.22, Lt. 160th St. E.	
PROPOSED PARK & RIDE LOTS			

MP 23.78



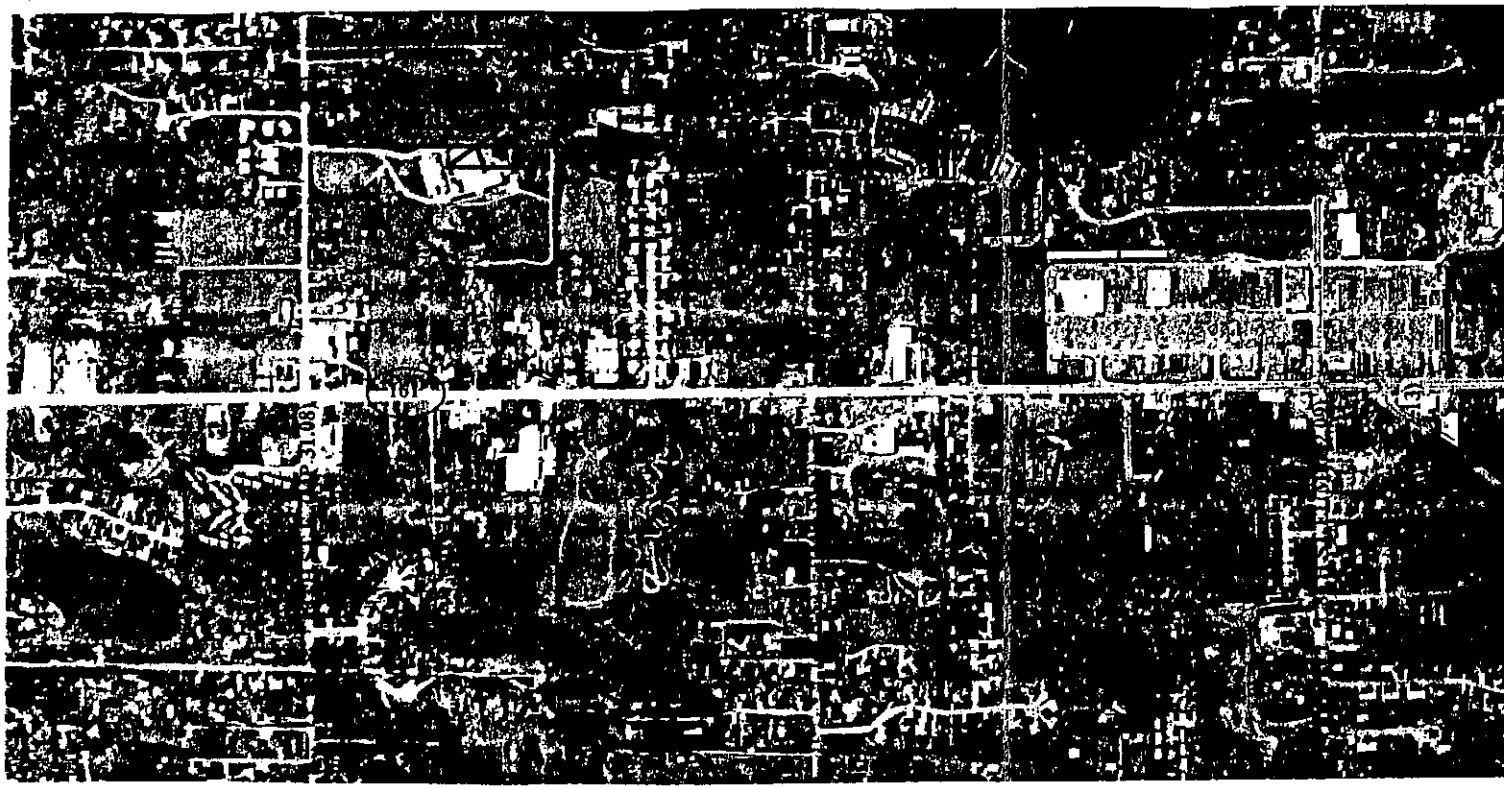
MILEPOST AND LANDMARKS	MP 23.98 132nd St E. ; MP 24.24 128th St.E. ; MP 24.73 120th St.E ; MP 25.00 116th St.E. ; MP 25.25
FUNCTIONAL CLASS	PRINCIPAL ARTERIAL (FEDERAL) URBAN-MINOR ARTERIAL (STATE)
ACCESS MANAGEMENT PLAN CLASS AND LIMITED ACCESS MASTER PLAN	CLASS 3 (PLANNED MODIFIED)
EXISTING TRAVELED WAY EXISTING ROADWAY WIDTH	5-11FT LANES 9FT SHOULDERS 73 FT ; MP 24.06 5-11 FT LANES 11 FT SHOULDERS 77 FT ; curb 59ft ; 48ft curb to curb ; MP 24.68 curb 59 ft ; MP 24.79 curb 48 ft ; MP 24.93 curb 59 ft ; MP 25.06 curb 48 ft ; MP... cu... 59...
PROPOSED TRAVELED WAY PROPOSED ROADWAY WIDTH	SAME AS EXISTING (SEE ABOVE) ~ SEE VARIOUS ; SAME AS EXISTING (SEE ABOVE)

	MP 23.77	MP 23.98	MP 24.24		MP 24.73	MP 25.00	
EXISTING RIGHT-OF-WAY		50ft LT, 50ft RT	TYP. 40-55 ft LT, 45-55 RT	TYPICALLY 30-ft LT, 50-ft RT		TYP. 30-ft LT, 60-ft RT	TYP. 40-45 Ft LT.
PROPOSED RIGHT-OF-WAY				NO ADDITIONAL RIGHT-OF-WAY PROPOSED			
1995 AVERAGE DAILY TRAFFIC (ADT)	(34424)	33000 to 35000		37000 to 43000	(39682)	42000 to 43000	
TRUCK PERCENTAGE (INCLUDES RV'S)					3% trucks		
PROJECTS IN 6 YEAR PLAN					NONE		
CONSTRUCTION BIENNIUM							
LONG RANGE MOBILITY NEEDS				SEE STRATEGIES OUTLINED IN SECTION 5 "PENDING REGIONAL AND LOCAL DISCUSSIONS, URBAN ACCESS CONTROL OP (CONSIDER PARTNERING WITH LOCAL AGENCIES TO CREATE BETTER NETWORKING OF ROAD			
EXISTING TRAFFIC SIGNALS			MP 24.24 128th St E.		MP 24.73 120th St E.	MP 25.00 116th St E.	
PROPOSED TRAFFIC SIGNALS		MP 23.98 132nd St. E.					
COLLISION REDUCTION CORRIDORS (HAC)	MP 21.36 - MP 24.00 MISC. TREATMENTS (HAC)						
COLLISION PREVENTION LOCATIONS (RISK)							
EXISTING NON-MOTORIZED FACILITIES	ADJOINING 5 to 6 FT WALKWAY/BIKEWAY (BOTH)		MP 24.24	TYPICALLY 5.5 FT SIDEWALK (BOTH SIDES)			
PROPOSED NON-MOTORIZED FACILITIES	CONSIDER SIDEWALKS AS DEVELOPMENT INCREASES						
EXISTING TRANSIT FACILITIES	BUS PULLOUT (LEFT)	FAR SIDE BUS PULLOUT (RIGHT) FAR SIDE BUS PULLOUTS (BOTH SIDES)		BUS PULLOUT (RIGHT) BUS PULLOUT (LEFT)		TRANSIT STOP FAR SIDE PULLOUTS (BOTH SIDES)	FAR SIDE PULLO (RIGHT)
KNOWN PROPOSED TRANSIT FACILITIES					NONE		
EXISTING PARK & RIDE LOTS			20 stalls MP 24.24 (128th) Elim Evangelical				
PROPOSED PARK & RIDE LOTS							



MILEPOST AND LANDMARKS		MP 28.73	MP 28.80 VALLEY AVE.	MP 29.03 BUSINESS SPENCER RD	NE
FUNCTIONAL CLASS			PRINCIPAL ARTERIAL (FEDERAL) URBAN - MINOR ARTERIAL (STATE)		
ACCESS MANAGEMENT PLAN CLASS AND LIMITED ACCESS MASTER PLAN		ESTABLISHED FULL MP 28.78	ESTABLISHED PARTIAL MP 28.81 CLASS 2	MP 29.24 PLANNED MODIFIED (MP 28.81 TO MP 34.15)	CLAS
EXISTING TRAVELED WAY	5 TO 6 LANES, 11 FT TO 14 FT WIDE TYP. SHLDRS 13 FT LT, 9 FT RT	MP 28.80	5 LANES TYP. SHLDRS 2 FT LT, 8-10 FT RT	MP 29.03 2-12 FT LANES, 2 FT LT & 4 FT RT SHLDRS TYP.	MP 29.53 TOTAL 3 LANES (INCL. 11 FT CLIN
EXISTING ROADWAY WIDTH			(46 FT TO 72 FT)	(30 FT TYP.)	(41 FT TYP.
PROPOSED TRAVELED WAY				WIDEN TO A 4 LANE FACILITY 4-12 FT LANES, 4 FT SHOULDERS	PROVIDE 1 ADDITIONA CREATING A 4 LANE H
PROPOSED ROADWAY WIDTH				(56 FT TYP.)	

EXISTING RIGHT-OF-WAY	MP 28.73 TOTAL R/W VARIES-125FT TO 218FT (60FT TOTAL) 30FT LT, 30FT RT | MP 29.05 Vic. VARIES 100FT TO 210 (TOTAL R/W) | MP 29.50 TOTAL R/W 75FT TO 85FT | MP 29.90 Vic TYP. 60FT TOTA
PROPOSED RIGHT-OF-WAY	UNKNOWN - TO BE DETERMINED LATER
1995 AVERAGE DAILY TRAFFIC (ADT)	26000 | 14000 | (14614) | 14000 | 14000
TRUCK PERCENTAGE (INCLUDES RV'S)	19%
PROJECTS IN 6 YEAR PLAN	"SR512/167 TO VIC 102ND AVE E." ASPHALT CONCRETE PAVEMENT OVERLAY
CONSTRUCTION BIENNIUM	1995 TO 1997 AND 1997 TO 1999
LONG RANGE MOBILITY NEEDS	MP 29.03 Vic. WIDEN TO A 4 LANE FACILITY | MP 29.53 Vic. WIDEN TO A 5 LANE
EXISTING TRAFFIC SIGNALS	MP 28.70 SR167 EB ON | MP 28.73 SR167 NB OFF | MP 28.80 VALLEY AVE.
PROPOSED TRAFFIC SIGNALS	MP 28.73 REMOVE WHEN RAMP RELOCATED
COLLISION REDUCTION CORRIDORS (HAC)	MP 29.60 (Consider horiz/vertical realignm 2nd SP Cross-section / Geometric imp HAC
COLLISION PREVENTION LOCATIONS (RISK)	MP 29.38 | MP 29.38 TO MP 30.38 (RISK) SEE
EXISTING NON-MOTORIZED FACILITIES	CLASS IV BIKEWAY
PROPOSED NON-MOTORIZED FACILITIES	IMPROVE PAVED SHOULDERS AND/OR PROVIDE SIDEWALKS AS DEVELOPMENT INCREASES | MP 29.24 IMPROVE PAVED SHOULDERS OTHER CITY / COUNTY ROADS TRAVEL
EXISTING TRANSIT FACILITIES	NO EXISTING PULLOUTS
KNOWN PROPOSED TRANSIT FACILITIES	NONE IDENTIFIED YET
EXISTING PARK & RIDE LOTS	NONE
PROPOSED PARK & RIDE LOTS	" EDGEWOOD/NORTH PUYALLUP PA EXACT LOCATION NOT IDEN



	MP 30.79	MP 31.08	MP 31.58	MP 32.09	
MILEPOST AND LANDMARKS		24th St. E.	Taylor St E / 16th St. E.	8th St. E	MP 32.13 Jovita Blvd
FUNCTIONAL CLASS			PRINCIPAL ARTERIAL (FEDERAL) / URBAN-MINOR ARTERIAL (STATE)		
ACCESS MANAGEMENT PLAN CLASS AND LIMITED ACCESS MASTER PLAN			CLASS 3 / PLANNED MODIFIED LIMITED ACCESS		
EXISTING TRAVELED WAY / EXISTING ROADWAY WIDTH	TYPICALLY 3 - 11 TO 12 FT LANES (CENTER TWO WAY LEFT TURN LANE) WITH 3 TO 4 FT SHOULDERS (42 FT TYPICALLY)				
PROPOSED TRAVELED WAY / PROPOSED ROADWAY WIDTH	TYPICALLY 5 - 12 FT LANES (CENTER TWO WAY LEFT TURN LANE) WITH 4 FT SHOULDERS (MINIMUM) - (DES (68 FT TYPICALLY)				

	MP 30.79						MP 32.09	
EXISTING RIGHT-OF-WAY	30 FT LEFT SIDE AND 30 FT RIGHT SIDE (TOTAL 60 FT)							40FT
PROPOSED RIGHT-OF-WAY	TO BE DETERMINED IN PRELIMINARY ENGINEERING PHASE OF PROGRAMMED PROJE							
1995 AVERAGE DAILY TRAFFIC (ADT)	17000 (18153)	(17590)	(17810)	(17898)	(18094)	(18605)	(19131)	20000
TRUCK PERCENTAGE (INCLUDES RV'S)	3%	4.6%	6.1%	5.1%	4.9%	6.6%	5%	
PROJECTS IN 6 YEAR PLAN	"36TH TO JOVITA". WIDEN FROM 3 TO 5 LANE FACILITY, PRELIMINARY ENGINEERING 1995 TO 1999							"JOVI
CONSTRUCTION BIENNIUM	UNKNOWN - CONSTRUCTION NOT FUNDED							
LONG RANGE MOBILITY NEEDS	WIDEN TO A 5 LANE FACILITY WITH CENTER TWO WAY LEFT TURN LANE - TYPICALLY							WIDE
EXISTING TRAFFIC SIGNALS		MP 31.08					MP 32.09	M
PROPOSED TRAFFIC SIGNALS		24TH ST. E.			MP 31.58 16TH ST. E.		8TH ST E.	JO RE
COLLISION REDUCTION CORRIDORS (HAC)	MP 30.30 TO MP 31.50 (HAC) - ADDRESS IN CONSTRAINED MOBILITY "36TH TO JOVITA"				MP 31.50 VIC.			
COLLISION PREVENTION LOCATIONS (RISK)								
EXISTING NON-MOTORIZED FACILITIES	CLASS IV BIKEWAY (3 TO 4 FT SHOULDERS							
PROPOSED NON-MOTORIZED FACILITIES	IMPROVE SHOULDERS AND/OR PROVIDE SIDEWALKS							NORTI
EXISTING TRANSIT FACILITIES							REGULAR TRANSIT STOP 8TH ST E.	
KNOWN PROPOSED TRANSIT FACILITIES	" NONE IDENTIFIED YET... FUTURE PUL							
EXISTING PARK & RIDE LOTS	NONE							
PROPOSED PARK & RIDE LOTS	Edgewood/N. Puyallup Park and Ride Lot (EXACT							

Included here for informational purposes is the Executive Summary of the SR 161 Public Opinion Survey, the written business survey questionnaire, and the telephone questionnaire. The entire SR 161 Public Opinion Survey Report may be viewed at the WSDOT Olympic Region Planning Office.

It was found that there was an error in the SR 161 written Business Survey. Question #24 of this survey identified geographical locations that are not along the SR 161 corridor. This error was found to have little or no statistical significance to the overall survey.

SR161 Corridor Plan Surveys
EXECUTIVE SUMMARY AND DATA IMPLICATIONS

Introduction

This report summarizes data gathered through surveys conducted with the SR161 corridor between May 9th and May 20th 1996. Telephone surveys were conducted of 300 randomly selected residents in the area runs from 234th Street in Graham north to Jovita Boulevard near the King/Pierce County line. In addition, a mail survey was sent to business along the SR161 corridor. A total of 439 surveys were completed and returned from businesses on the SR161 corridor. At the same time these surveys were conducted for the SR161 corridor, similar survey efforts were underway for the SR162 and SR410 corridors

These surveys are part of the public involvement program being conducted by the Washington State Department of Transportation Olympic Region to get feedback in a corridor planning effort underway in the SR161 corridor. In addition to these surveys, the Department has been guided by the input of an interjurisdictional steering committee, mailings to community residents, media releases and a series of community open houses to familiarize residents and businesses with the purposes of the Corridor Planning effort.

Organization of this Report

This Executive Summary is structured so that it can serve as a stand alone report and as an introduction to the full report of the surveys on the SR161 Corridor. As such, it includes a summary of data implications, as well as an analysis of how the data from the SR161 survey compare with data from the surveys conducted on SR162 and SR410. The purpose of this structure is to eliminate the redundancy typically found in survey reports of this type. A more detailed analysis of the survey data is presented in the following sections of this report. Detailed analyses for SR162 and SR410 are presented in separate reports, following the same report structure.

Data Implications

These surveys were conducted to obtain a broad and representative assessment of public preferences for potential improvements on SR161. The questionnaires were structured to respond to the following research questions:

- What problems do residents and businesses perceive on SR161, and what do they feel causes those problems?
- How severe do residents feel the problems are on SR161 and how do they feel the problems will change over time?
- Do residents and businesses see a connection between the problems they perceive and the solutions being proposed? What solutions are preferred in the corridor?

What problems do residents and businesses perceive on SR161, and what do they feel causes those problems?

- Over half (55%) of the residents and more than two-thirds (68%) of businesses surveyed along the SR161 corridor feel that "Highway 161 is not good...it definitely needs to have improvements made to it."
- Traffic congestion/problems by far (81% of residents mention this) is the issue that residents feel needs to be addressed in the SR161 corridor. With businesses, no one central issue is identified - 62 percent say access related congestion, 60 percent mention congestion in general and 54 percent say highway congestion are issues which need to be addressed. Some of the disparity here could be due, in part, to the fact the question included a list of potential issues (prompted) in the self-administered business survey, but was posed as an open-ended question (unprompted) in the telephone survey of residents.
- When asked specifically about traffic congestion on the highway itself (versus near it) two-thirds of residents (67%) and 62 percent of businesses say it currently is a 'major problem.'
- Over half (51%) of residents feel that safety for pedestrians and bicyclists is a 'major problem.'
- Almost half (47%) of businesses feel that traffic congestion due to access problems is a 'major problem.'

How severe do residents feel the problems are on SR161 and how do they feel the problems will change over time?

- More than eight out of ten residents (84%) and businesses (83%) feel that the overall traffic situation on and around SR161 has gotten worse in the past five years. Nearly eight out of ten (79%) residents and more than eight out of ten (83%) businesses feel that the traffic situation will get worse in the next ten years if the road remains in its current state.
- Nearly all of the residents (97%) and businesses (93%) who think traffic will get worse if nothing is done, attribute the problem (at least in part) to an increase in population in the area.
- More than eight out of ten residents (81%) and over seven out of ten (74%) businesses familiar with the segment feel that the traffic situation on the section of SR161 between Edgewood and Milton has gotten worse over the past five years. More than two-thirds of residents (68%) and almost two-thirds of businesses (62%) think that the situation on this section will get much worse in the next ten years if nothing is done.
- General population increase is mentioned by 97% of residents and 86% of businesses as a reason for worsening traffic problems in the future on this section of Highway SR161.
- 40% of residents surveyed say they are 'not at all familiar' with the section of 161 in the Graham vicinity, between 234th and 176th streets. Of those residents familiar with the section, nearly nine out of ten (87%) residents and almost eight out of ten (78%) of businesses responding to questions about the segment feel the traffic situation on this has gotten worse in the last five years.
- More than eight out of ten residents (82%) and businesses (81%) think that the traffic situation on this section in Graham will get "much worse" in the next ten years if nothing is done.
- Nearly all residents (97%) and businesses (93%) feel the worsening traffic situation along SR161 in Graham will be due in part to the population increase in the area.

Do residents and businesses see a connection between the problems they perceive the solutions being proposed. What solutions are preferred in the corridor?

- When asked to choose between three facility modification alternatives for alleviating traffic problems in the section of SR161 which runs between Edgewood and Milton - four lanes with a median strip, five lanes with a turn lane, or leaving the section as is - nearly two-thirds (64%) of residents and over three-fourths (76%) of businesses say they would be most likely to support the five lane alternative.
- Adding lanes to the section of SR161 in the Graham vicinity would be "very likely" to be supported by 69% of residents and 75% of businesses surveyed (who were aware of the section).
- Residents and businesses are much more likely (60% and 69%, respectively) to prefer an improvement to the Graham segment of SR161 that has two lanes each way plus a center turn lane than two lanes each way with a median (36% and 25%, respectively).

How do perceptions of SR161 compare with attitudes of SR162 and SR410?

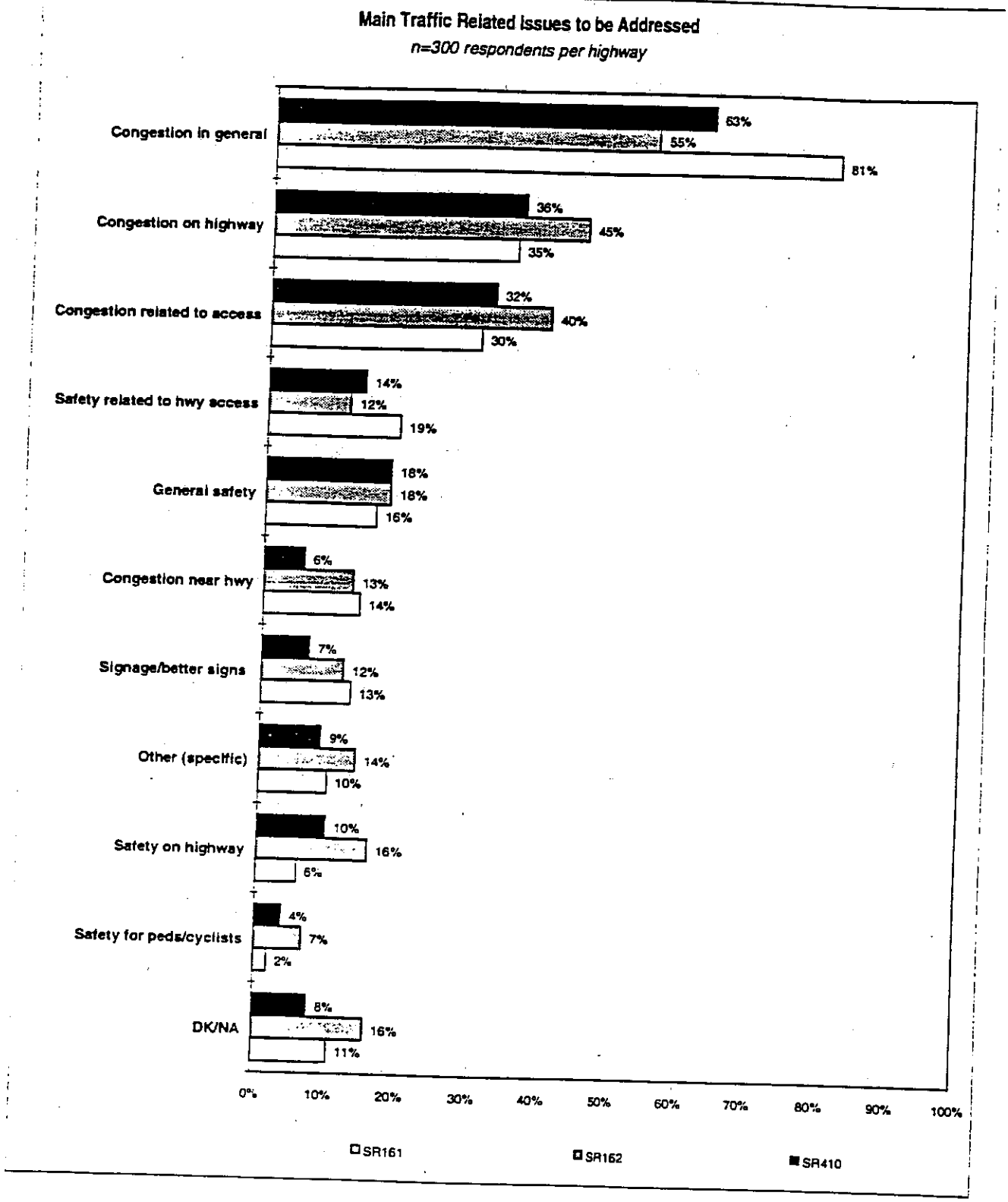
Responses to the three resident questionnaires - SR161, SR162 and SR410 - are very similar. Concerns show residents have similar perceptions and beliefs about their local highway corridor.

- Consistently, residents and businesses near the various corridors believe the three highways need improvements.

Business respondents are identified by shading. Please note small sample sizes of SR410 and SR162 businesses.

	Sample size	Not good, needs improving	OK, but could be improved	Fine as is
SR161	300 respondents	55%	32%	11%
SR161	439 respondents	68	24	4
SR162	300 respondents	46	42	12
SR162	28 respondents	64	42	12
SR410	300 respondents	31	48	22
SR410	64 respondents	36	45	13

- As shown in the following graph, among respondents of the three surveys, congestion on the highways is the biggest concern whereas safety issues are mentioned less frequently.



- Throughout the surveys, support is generally likely for improvements; however, it is somewhat less likely for median barriers than for turn lanes.

- Residents who believe highways definitely need work are more likely to view issues as "Major problems", more likely to believe the traffic situation will get "much worse" if nothing is done and more likely to support improvements than other residents. On Highway 161, respondents with who feel the highway definitely needs work are somewhat less likely than others to believe access problems contribute, or will contribute, to the traffic problem if nothing is done.

How do perceptions and attitudes from the business community compare to input from resident surveys?

- Perceptions and attitudes from businesses and local residents along the corridors are generally consistent.
- In general, businesses along SR161 and SR162 tend to view the overall current highway condition to be in somewhat worse condition than do local residents in those areas.
- Businesses are more likely than residents to view highway access as a problem, relating to both congestion and safety issues.
- Business respondents along SR161 and SR162 see the same trend of worsening traffic over the past five years as do residents in those areas. Respondents from SR410 businesses, however, are less likely than local residents to say traffic has gotten worse over the past years.
- There is little to no difference, however, among businesses and residents regarding the future of SR410, SR161 and SR162 - the majority of all respondents feel traffic conditions will get worse with no improvements.
- Business respondents on SR161 and SR162 are more likely than resident respondents to blame a worsened traffic situation on access problems. Respondents with businesses along SR410 are significantly less likely than local residents or businesses along other corridors to view roadway design issues as causing problems.

SR 161 QUESTIONNAIRE

Hello, may I please speak to one of the heads of household?

SCHEDULE CALLBACK IF NECESSARY
This is a survey about transportation on State Highway Route 161 (READ: "One sixty one."). As you may be aware, the Washington State Department of Transportation has been working with a local advisory committee to develop a plan for Highway 161 intended to improve traffic conditions there.

I am _____ with _____, and you are one of 300 persons, selected at random, to participate in this study to help figure out what kinds of solutions make the most sense.

S.1 Before we get started, are you still at [READ ADDRESS FROM SAMPLE LIST]?

1 Yes
2 No - THANK AND TERMINATE

Q1 Would you say you are...(READ)

1 Very familiar,
2 Fairly familiar,
3 Not very familiar, or
4 Not at all familiar with Highway 161? - THANK AND TERMINATE.

Q2 So that we can get a general sense for how the community feels about Highway 161, I'd like to read three statements to you. Thinking about three important issues to those who live along and/or use the highway - traffic congestion, access onto and off of the highway and safety - please choose the one statement you most agree with. (READ THROUGH BEFORE RECORDING RESPONSE. BRIEF PAUSE AFTER READING EACH.)

1 Highway 161 is just fine as is. I do not wish to see any changes made to it.
2 Highway 161 is OK, but I think there are some things that could be done to improve it.
3 The current state of Highway 161 section is not good. I think it definitely needs to have improvements made to it.
4 (DON'T READ) No Choice

Q3 (If '2' or '3' from Q2) What do you think are the main traffic-related issues that should be addressed on and/or around Highway 161? (DON'T READ)

1 Traffic congestion/problems - general (on and around highway)
2 Traffic congestion/problems on the highway itself
3 Traffic congestion/problems related to access onto and off of the highway
4 Traffic congestion/problems near the highway/side streets
5 Safety - general
6 Safety on the highway
7 Safety related to access onto and off of the highway
8 Safety for pedestrians and bicyclists
9 Signage/Need better signs indicating exits/streets, etc.
10 Other (Specify): _____
11 Other (Specify): _____

Now I'm going to read to you several issues relating to the traffic on and around Highway 161. For each of these, please tell me if you think it is a major problem, a moderate problem or not a problem. (READ AND ROTATE)

		Major	Moderate	None	DK
Q4	Traffic congestion on the highway itself	1	2	3	9
Q5	Traffic congestion related to access onto and off of the highway	1	2	3	9
Q6	Traffic congestion near the highway, not on it or related to access onto or off of it (CLARIFY: "That is, general traffic circulation in the vicinity of the highway").	1	2	3	9
Q7	Safety on the highway itself	1	2	3	9
Q8	Safety related to access on and off of the highway	1	2	3	9
Q9	Safety for pedestrians and bicyclists	1	2	3	9
Q10	Directional signage, like exit signs or street signs telling you where you are or how far an exit for a certain street is	1	2	3	9

Q11 Do you feel the overall traffic situation on and around Highway 161 over the past 5 years has...(READ)?

1 Gotten better,
2 Gotten worse, or
3 Remained about the same?

Q12 If Highway 161 remains in its current state, do you feel the overall traffic situation on it in the next 10 years will ...(READ)

1 Get much worse,
2 Get somewhat worse,
3 Stay about the same,
4 Get somewhat better, or
5 Get much better?

Q12a (If '1' or '2' in Q12) Why do you say that?

1 General population increase in the area
2 The roadway is too narrow or not designed for volume of traffic
3 Problems with access onto and off of the highway
4 Inadequate roads and signals near the highway
5 Other (Specify): _____
6 Other (Specify): _____

Now we're going to talk about two specific sections of Highway 161.
Highway 161 Section #1: The first section we'll be talking about is along 161 running approximately between the cities of Edgewood and Milton, from 36th Street East to Jovita (Joe veeta) Boulevard. This is the section of 161 often referred to as Meridian Street.

Q13 Would you say you are...(READ)

1 Very familiar,
2 Fairly familiar,
3 Not very familiar, or
4 Not at all familiar with this section along Highway 161? - SKIP TO HIGHWAY 161 SECTION #2 QUESTIONS.

Q14 Thinking now <u>just about this section of Highway 161,</u> do you feel the overall traffic situation on and around this section over the past 5 years has...(READ)?

1 Gotten better,
2 Gotten worse, or
3 Remained about the same?

Q15 Again thinking just of this section of Highway 161, if it remains in its current state do you feel the overall traffic situation on and around this section in the next 10 years will ...(READ)

1 Get much worse,
2 Get somewhat worse,
3 Stay about the same,
4 Get somewhat better, or
5 Get much better?

Q15a (If '1' or '2' in Q15) Why do you say that?

1 General population increase in the area
2 The roadway is too narrow or not designed for volume of traffic
3 Problems with access onto and off of the highway
4 Inadequate roads and signals near the highway
5 Other (Specify): _____
6 Other (Specify): _____

Following are three options being considered in addressing some of the concerns about this section of Highway 161. Please choose the one you think you would be most likely to support, the you'd be second most likely to support, and the one you'd be least likely to support. Here are the three options. (READ THROUGH ALL BEFORE ACCEPTING RESONSE). (IF NECESSARY AFTER READING: "Which one of these would you be most likely to support? Which one next most likely to support? Which one least likely to support?")

Q16 1 One option for this section is to add to the current lanes, so that there would be four lanes, two lanes in each direction, with a center landscaped median strip. This addition would also widen this section of 161.

2 Another option would be to add to the current lanes so that there would be five lanes, two lanes in each direction, with a center turn lane. This addition would also widen this section of 161.

3 A third option would be to leave the existing three land highway as it is, with one lane in each direction, with a center turn lane.

4 (DON'T READ) None of these

5 (DON'T READ) Don't know

Now for each of these three options, please tell me how likely you would be to support each.

Q17 First, how likely would you be to support the option of adding lanes, so that there would be four lanes, two lanes in each direction, with a center landscaped median strip. This addition would also widen this section of 161? Would you be.....

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely?

Q18 How likely would you be to support the third option, which would be to add to the current lanes so that there would be five lanes, two lanes in each direction, with a center turn lane. This addition would also widen this section of 161? Would you be...(READ)

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely?

Q19 And finally, how likely would you be to support the option of leaving this section of Highway 410 as is? Would you be...(READ)

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely?

Highway 161 Section #2: Now we're going to talk about another section along Highway 161. This section is in the Graham vicinity, and it runs from 234th to 176th.

Q19 Would you say you are...(READ)

1 Very familiar,
2 Fairly familiar,
3 Not very familiar, or
4 Not at all familiar with this section along Highway 161? - SKIP TO DEMOGRAPHICS SECTION

Q20 Thinking now <u>just about this section of Highway 161,</u> do you feel the overall traffic situation on and around this section over the past 5 years has...(READ)?

1 Gotten better,
2 Gotten worse, or
3 Remained about the same?

Q21 Again thinking just of this section of Highway 161, if it remains in its current state do you feel the overall traffic situation on and around this section in the next 10 years will ...(READ)

1 Get much worse,
2 Get somewhat worse,
3 Stay about the same,
4 Get somewhat better, or
5 Get much better?

Q21a (If '1' or '2' in Q21) Why do you say that?

1 General population increase in the area
2 The roadway is too narrow or not designed for volume of traffic
3 Problems with access onto and off of the highway
4 Inadequate roads and signals near the highway
5 Other (Specify): _____
6 Other (Specify): _____

Q22 One option to attempt to solve some of the concerns about Highway 161, and particularly this section of 161 is to add lanes, which would widen this two lane section of 161. How likely would you be to support this proposed option? Would you be...(READ)

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely? - SKIP TO Q25

Following are two options being considered for widening this section of 161. Please choose the one you think you would be most likely to support. Here are the two options. (READ THROUGH ALL BEFORE ACCEPTING RESONSE). (IF NECESSARY AFTER READING: "Which one of these would you be most likely to support?)

Q23 1 One option for widening the highway is to create two lanes each way, with a center turn lane, from 234th to the Pierce County Park in Graham.

2 Another option to widen the highway would be to create two lanes each way with a median barrier in the middle. Openings would be provided at major intersections to allow left turns and turnarounds. This widened highway would run from the County Park to 176th. How likely would you be to support this proposed option? Would you be...(READ)

3 (DON'T READ) None of these

4 (DON'T READ) Don't know

Q24 And now for each of these two options for widening this section of 161, please tell me how likely you would be to support it. For the first option, creating two lanes each way, with a center turn lane, from 234th to the Pierce County Park in Graham, how likely would you be to support this. Would you be....(READ)

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely?

Q25 And for the second option for widening this section of 161, creating two lanes each way with a median barrier in the middle, with openings provided at major intersections to allow left turns and turnarounds, and running from the County Park to 176th. How likely would you be to support this option. Would you be....(READ)

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely?

DEMOGRAPHICS

Now we have just a few demographic questions for statistical categorization purposes only. All of your responses will remain confidential.

Q26 In an average week, how often do you use Highway 161 on any or all of the parts of it between Graham and Milton? (Round trip daily commute, or any other type of round trip = two trips)

_____ # of trip per week

Q27 How long have you lived in your current residence?

1 Less than 2 years
2 2-5 years
3 6-10 years
4 11 to 15 years
5 Over 15 years

Q28 How many persons live in your household at the current time?

_____ # of persons in household

Q29 Do you own or rent your home?

1 Own
2 Rent

BY OBSERVATION: 1 MALE 2 FEMALE

(hcm-yu-tc)

000185

Washington State Department of Transportation

161

Business Survey

The Washington State Department of Transportation has been working to assess what sort of improvements make the most sense for Highway 161. You are one of several hundred businesses along 161 we are contacting for feedback about potential improvements. Please take a few minutes to fill out this questionnaire, and return by mail (postage paid) within 7 days. Thank you!

Q1 – In order to get a general sense for how the community feels about Highway 161, please choose the one statement you most agree with. Traffic congestion, access onto and off of the highway and safety. (Please check one only)

- Highway 161 is just fine as is. I do not wish to see any changes made to it - *Skip now to Q3*
- Highway 161 is OK, but I think there are some things that could be done to improve it.
- The current state of Highway 161 is not good. I think it definitely needs to have improvements made to it.
- No opinion - *Skip now to Q3*

Q2 – What do you think are the main traffic-related issues that should be addressed on and/or around Highway 161? (Check all applicable)

- General traffic congestion/problems on and around highway
- Traffic congestion/problems *on the highway itself*
- Traffic congestion/problems *related to access onto and off of the highway*
- Traffic congestion/problems *near the highway/side streets*
- Safety - general
- Safety *on the highway*
- Safety *related to access onto and off of the highway*
- Safety for *pedestrians and bicyclists*
- Signage/Need better signs indicating exits/streets, etc.
- Other - Please specify: ________________

For each of the following highway issues, please indicate if you think it is a major problem, a moderate problem or not a problem on 161.

Q3 – Traffic congestion on the highway itself

- Major problem
- Moderate problem
- Not a problem
- Don't know

Q4 – Traffic congestion related to access onto and off of the highway

- Major problem
- Moderate problem
- Not a problem
- Don't know

Q5 – Traffic congestion near the highway, not on it or related to access onto or off of it (general traffic circulation in the vicinity of the highway)

- Major problem
- Moderate problem
- Not a problem
- Don't know

Q6 – Safety on the highway itself

- Major problem
- Moderate problem
- Not a problem
- Don't know

Q7 – Safety related to access on and off of the highway

- Major problem
- Moderate problem
- Not a problem
- Don't know

Q8 – Safety for pedestrians and bicyclists

- Major problem
- Moderate problem
- Not a problem
- Don't know

Q9 – Directional signage, like exit signs or street signs telling you where you are or how far an exit for a certain street is

- Major problem
- Moderate problem
- Not a problem
- Don't know

Q10 – Do you feel the overall traffic situation on and around Highway 161 over the past 5 years has...

- Gotten better,
- Gotten worse, or
- Remained about the same?

Q11 – If Highway 161 remains in its current state, do you feel the overall traffic situation on and around it in the next 10 years will ...

- Get much worse,
- Get somewhat worse,
- Stay about the same, - *Skip now to Q12*
- Get somewhat better, or - *Skip now to Q12*
- Get much better? - *Skip now to Q12*

Q11a – Why do you say that? (You may check more than one)

- General population increase in the area
- The roadway is too narrow/not designed for volume of traffic
- Problems with access onto and off of the highway
- Inadequate roads and signals near the highway
- Other - Please specify: ________________

Questions 12 - 17 refer to a specific section along 161, which runs between the towns of Edgewood and Milton, from 36th Street east to Jovita Boulevard. This section of 161 is often referred to as Meridian Street

Q12 – Thinking now just about this section of Highway 161, do you feel the overall traffic situation on and around this section over the past 5 years has...

- Gotten better
- Gotten worse, or
- Remained about the same?

Q13 – Again thinking just of this section of Highway 161, if it remains in its current state do you feel the overall traffic situation on and around this section in the next 10 years will...

- Get much worse
- Get somewhat worse,
- Stay about the same, - *Skip now to Q14*
- Get somewhat better, or - *Skip now to Q14*
- Get much better? - *Skip now to Q14*

Q13a – Why do you say that?

- General population increase in the area
- The roadway is too narrow/not designed for volume of traffic
- Problems with access onto and off of the highway
- Inadequate roads and signals near the highway
- Other - Please specify ________________

Q14 – Please rank the following three options for addressing the concerns of this section of 161. Give a "1" for the one you most prefer, "2" for the one you prefer second most and "3" for the one you prefer least

(Rank 1, 2, 3)

___ Four lanes with two lanes in each direction, with a center landscaped median strip.

___ Five lanes, two lanes in each direction, with a center turn lane.

___ Leave the existing three lane highway as it is: one lane in each direction, with a center turn lane

Please continue on back

Q15 – How likely would you be to support the four lanes, with two lanes in each direction option?
Would you be....
- ☐ Very likely,
- ☐ Somewhat likely,
- ☐ Somewhat unlikely, or
- ☐ Very unlikely to support this option?

Q16 – How likely would you be to support the five lanes, with a center turn lane option?
Would you be...
- ☐ Very likely,
- ☐ Somewhat likely,
- ☐ Somewhat unlikely, or
- ☐ Very unlikely to support this option?

Q17 – How likely would you be to support the option of leaving this section as is, with three lanes including the center turn lane? Would you be...
- ☐ Very likely,
- ☐ Somewhat likely,
- ☐ Somewhat unlikely, or
- ☐ Very unlikely to support this option?

Questions 18 through 22 refer to a second specific section of 161. This section is in the Graham area, and it runs from 234th to 176th.

Q18 – Thinking now just about this section of Highway 161, do you feel the overall traffic situation on and around this section over the past 5 years has...
- ☐ Gotten better,
- ☐ Gotten worse, or
- ☐ Remained about the same?

Q19 – And if this section remains in its current state do you feel the overall traffic situation on and around this section in the next 10 years will ...
- ☐ Get much worse,
- ☐ Get somewhat worse,
- ☐ Stay about the same, - *Skip now to Q20*
- ☐ Get somewhat better, or - *Skip now to Q20*
- ☐ Get much better? - *Skip now to Q20*

Q19a – Why do you say that?
- ☐ General population increase in the area
- ☐ The roadway is too narrow/not designed for volume of traffic
- ☐ Problems with access onto and off of the highway
- ☐ Inadequate roads and signals near the highway
- ☐ Other - Please specify: ______

Q20 – An option to address some of the concerns about this section of 161 is to add lanes, which would widen this two lane section of 161. How likely would you be to support this proposed option? Would you be
- ☐ Very likely,
- ☐ Somewhat likely,
- ☐ Somewhat unlikely, or
- ☐ Very unlikely to support this option?

Q21 – Which one of the following two widening options would you prefer?

- ___ Two lanes each way, with a center turn lane, from 234th to the Pierce County Park in Graham.
- ___ Two lanes each way with a median barrier in the middle, with openings at major intersections to allow left turns and turn-arounds. This option would run from the County Park to 176th.

Q22 – How likely would you be to support the option of two lanes each way, with a center turn lane, from 234th to the County Park?
Would you be...
- ☐ Very likely,
- ☐ Somewhat likely,
- ☐ Somewhat unlikely, or
- ☐ Very unlikely to support this option?

Q23 – How likely would you be to support the option of two lanes each way with a median barrier in the middle with openings at major intersections to allow left turns and turnarounds?
Would you be...
- ☐ Very likely,
- ☐ Somewhat likely,
- ☐ Somewhat unlikely, or
- ☐ Very unlikely to support this option?

Q24 – In an average week, how often do you use Highway 161 on any or all parts of it between Buckley and Bonney Lake? (Round trip commute, or any other type of round trip = trips)

_______ # of trips per week

Q-25 – How many employees does your business have?

_______ # of employees

Q26 – How long has your business been at its current site?
- ☐ Less than 2 years
- ☐ 2-5 years
- ☐ 6-10 years
- ☐ 11 to 15 years
- ☐ Over 15 years

Q27 – What type of business is this?
- ☐ Manufacturing
- ☐ Business services
- ☐ Personal services
- ☐ Retail
- ☐ Wholesaler/Distributor
- ☐ Other - Please specify: ______

Q28 – What is the address of this business?

[illegible] North
Street Address

______
Suite Number

Puyallup Wash 98002
City/Zip Code

I don't Travel This Hwy Very often

Please fold the survey and tape the seal so that the Business Reply Mail panel is showing and mail it within seven days

Thanks for your help with our research. Your opinions are greatly appreciated!

Re fold so Business Reply Address shows and tape closed.

Washington State
Department of Transportation
Business Survey

No postage necessary if mailed in the United States

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO 155 OLYMPIA WA

POSTAGE WILL BE PAID BY ADDRESSEE

PACIFIC RIM RESOURCES
600 UNIVERSITY ST STE 2010
SEATTLE WA 98101-9956

In addition to their on-going involvement in the route planning of SR 161, the Steering Committee members were sent copies of the Draft SR 161 Route Development Plan in September, 1996. In doing so WSDOT requested that the steering members review and provide written comments reflecting their agency's concurrence of the Draft plan.

The following agencies were provided with a Draft Route Development Plan for their review.

Puget Sound Regional Council
Pierce County
City of Edgewood
City of Milton
City of Puyallup
Pierce Transit

As of December 31, 1996, the following agencies had provided written comments addressed to WSDOT regarding the Draft SR 161 Route Development Plan:

Puget Sound Regional Council
City of Edgewood
City of Milton
City of Puyallup

The following letters highlight support and concerns by the above mentioned participating agencies to issues addressed in the SR 161 Route Development Plan. While many letters may have been received by a single agency, the following are those that identify project preferences.

Puget Sound Regional Council
PSRC

RECEIVED
OCT 28 1996
OLYMPIC REGION

October 25, 1996

Gary Farnsworth
Assistant Transportation Planning Manager
Washington State Department of Transportation
Olympic Region Headquarters
5720 Capitol Blvd., Tumwater
P.O. Box 47440
Olympia, WA 98504-7440

Dear Mr. Farnsworth:

Thank you for your transmittal of the Draft Route Development Plans for SR 161, SR 162 and SR 410. In general, we are pleased with the documents' attention to issues such as access management and the need to look at multimodal improvements to address capacity requirements along portions of these routes. We would also offer the following specific comments:

- Within Section 5 of each document (Proposed Route Improvements), additional detail should be given to the benefit of **restricting access** to the state highway, as well as how/where those improvements might be accomplished. Benefits could be improved level of service, decreased travel time, etc. Also, describing additional lanes as additional *general purpose* lanes would help distinguish these improvements from HOV.

- The Executive Summary of each document should describe the State's ability to fund the improvements outlined in the RDP. Nearly all of the mobility improvements listed for these routes would require additional revenue authority, such as an increased gas tax. Although this is briefly referred to in Section 8, its importance warrants a discussion at the beginning of the document.

We would like to also acknowledge the extensive efforts you have made over the last year and a half to involve the public as well as the affected communities in the corridors. Those efforts should create a solid foundation of support by all parties for the recommendations contained in the route development plans.

Sincerely,

Anthony W Lickteig
Associate Planner

cc: Peter Beaulieu, Principal Planner
Don Pethick, Principal Planner
c:\transys\rdppierc.o96 awl

[illegible] Avenue Suite 500 • Seattle, Washington 98104-1035 • 206 464-7090 • FAX 587-4825

CITY OF PUYALLUP

Public Works Department
218 West Pioneer
Puyallup, WA 98371
206/841-5485

Chris Schroedel, P.E.
Design Studies Engineer
W.S.D.O.T.
Olympic Region Planning Office
P.O. Box 47440
Olympia, WA 98504-7440

Re: Comments on the Route Development Plan for SR 161.

Dear Chris:

The city has reviewed the draft Route Development Plan for SR 161 and have the following comments for your consideration:

Section 2

- The map on page 9 does not show the recently constructed half diamond interchange between SR 512 and 9th St SW (94th Ave E when in the county).
- The Pierce County projects listed on page 10 and 11, under 94th Ave E, note improvements made to 94th Ave E, between 104th and 112th, and the new interchange with SR 512. When reading this, the reader is given the impression the project was on the county plan and constructed by the county, but this was not the case. As a matter of fact, the county was not in support of this project, therefore, provided no funding for its construction to the city.
- On page 14, Puyallup's southerly city limit is shown at 112th St E. Actually, our southerly city limit along SR 161 extend to 120th St E. I've enclosed a map illustrating city limits and city street names for your information.
- In the table found on page 14, under Access Classification, Partial and Full Control type is used, yet there is no description of what this means on page 15. It is stated a brief AMP description follows the table - a little confusing.

Section 5

- On page 39, the last bullet under Action Strategies, we would like to include pedestrian connection as well as bicycle. As you know, the city has identified the need for an overhead pedestrian bridge near the South Hill Mall to connect the commercial areas on the east side of SR 161.
- On page 41, U turns are mentioned, but no explanation or graphic is provided. Is the U turn, as talked about in our steering meeting, where a motorist would turn right onto the minor leg and then perform the U turn in a newly constructed area? This item, without an explanation, has raised several questions here with our staff. An explanation or graphic would be helpful.
- On page 44, 128th St E to SR 512 Interchange, under Recommended Improvements, this section of SR 161 is referred to as 5 lanes. Actually, the section varies from 5 lanes at its southerly end to 8 lanes in the middle and then reduces to 3 lanes at the northerly end.

- On page 51, the Pierce Transit routes listed are not complete. Pierce Transit started a new route in September, route # 202, that connects Sumner to Lakewood along Pioneer and 72nd St. You will also need to revise "Local Fixed Route" on page 52 since this route now exists.
- On page 58, SR 161 from Meridian to SR 512, has been identified as a "Collision Prevention" section. When looking at the accident data in Appendix A, SR 161 from 128th to SR 512 has the *highest* Accident Rate per MVM for the past five years of any other segment along SR 161. The Accident Rate for each of these years is almost twice the Critical Rate, yet the majority of this section - 128th to Meridian, is not mentioned for any type of improvements to the existing system. (Why is this?) We feel the study should acknowledge this section exceeds the statistical Critical Rates and should be identified as a "Collision Prevention" section. One of the contributing problems of this section is the traffic on SR 161 heading EB/SB at Meridian does not have to stop. With an additional through lane at this intersection the problem may worsen. Also, there are no overhead lane assignment signs. This is a problem because the pavement markers are covered due to the volume of traffic. Motorist unfamiliar with the area have a difficult time observing in time and maneuvering through this section. There are some other minor intersection improvements that could be considered through this segment. Also, I am confused with the statement "No Action (Puyallup), 35 MPH Signal Controlled or included in mobility improvement cost estimate", who's quote is this and what does it mean?
- Page 65, again my comment would be a repeat of the last bullet. Existing intersection improvements, such as: overhead lane assignment signs, guide signs, pedestrian bridge that could double as a sign bridge, sign and revise signal for an additional combination left turn / through lane at 39th / SR 161 EB on 39th Ave SW, etc.
- Page 66, SR 167 on ramp and SR 167 off ramp, its my understanding the state is considering relocating both of these ramps to a new location between the two. Are you really considering relocating the off ramp to the existing on ramp location? This would require North Levee to remain signalized (signals are under construction at this time), thus creating an awkward five legged intersection.

Section 8

Under the long term mobility improvement projects, does 176th St E to SR 512 I/C project include SR 512 Interchange mobility project as described on page 45? How does the state propose to fund and prioritize the" Collision Prevention" projects?

Also, I thought the steering commitee were in agreement to support the widening of 94th / 9th between 39th (112th) south to at least 128th Ave E, as an alternate route in the area of high congestion on South Hill, yet there is no mention of this project in the document.

Thank you for allowing us to review the draft Route Development Plan for SR 161. If you should have any questions regarding our comments, please call me at (206) 841-5579.

Sincerely,

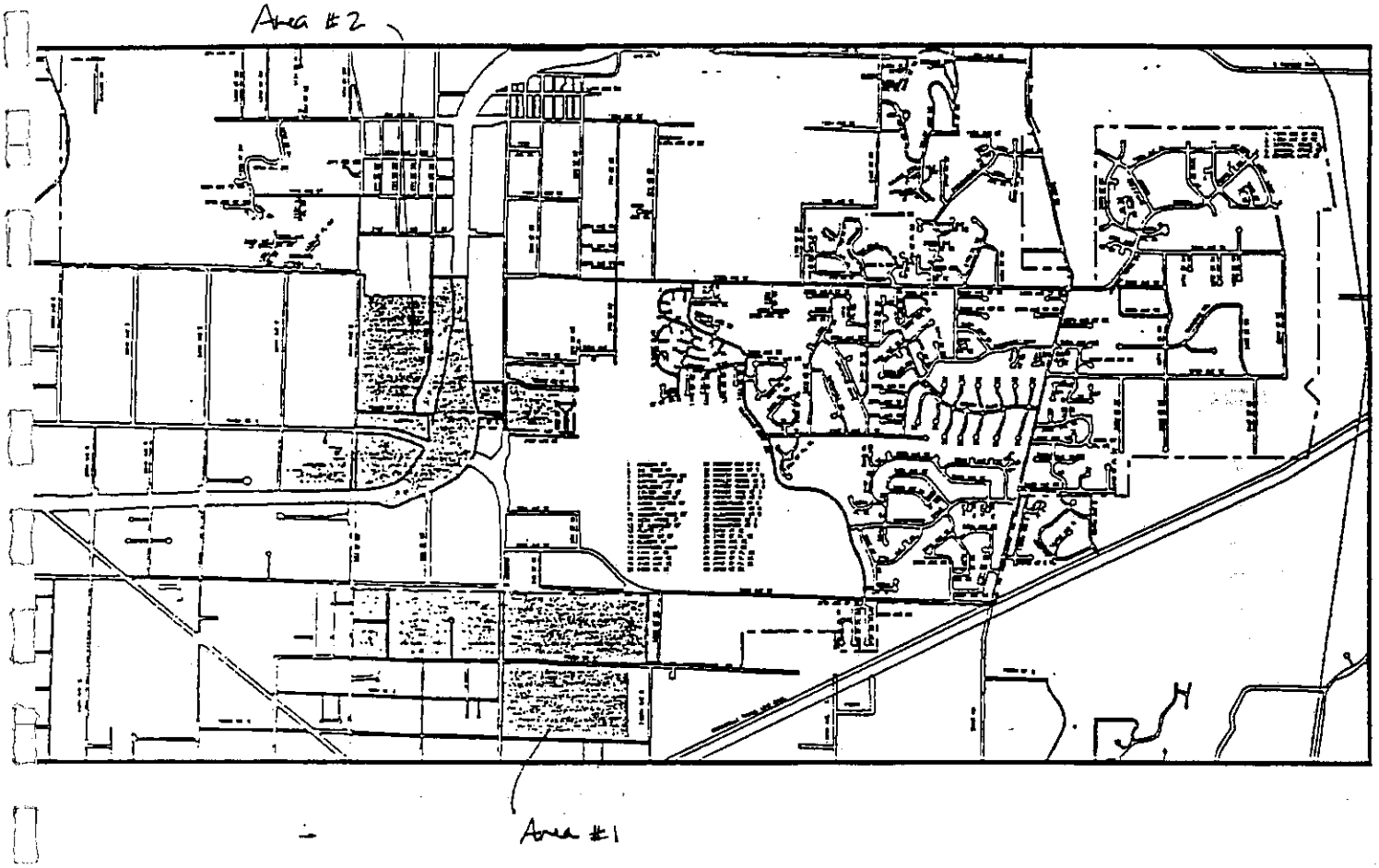
Marlene Ford

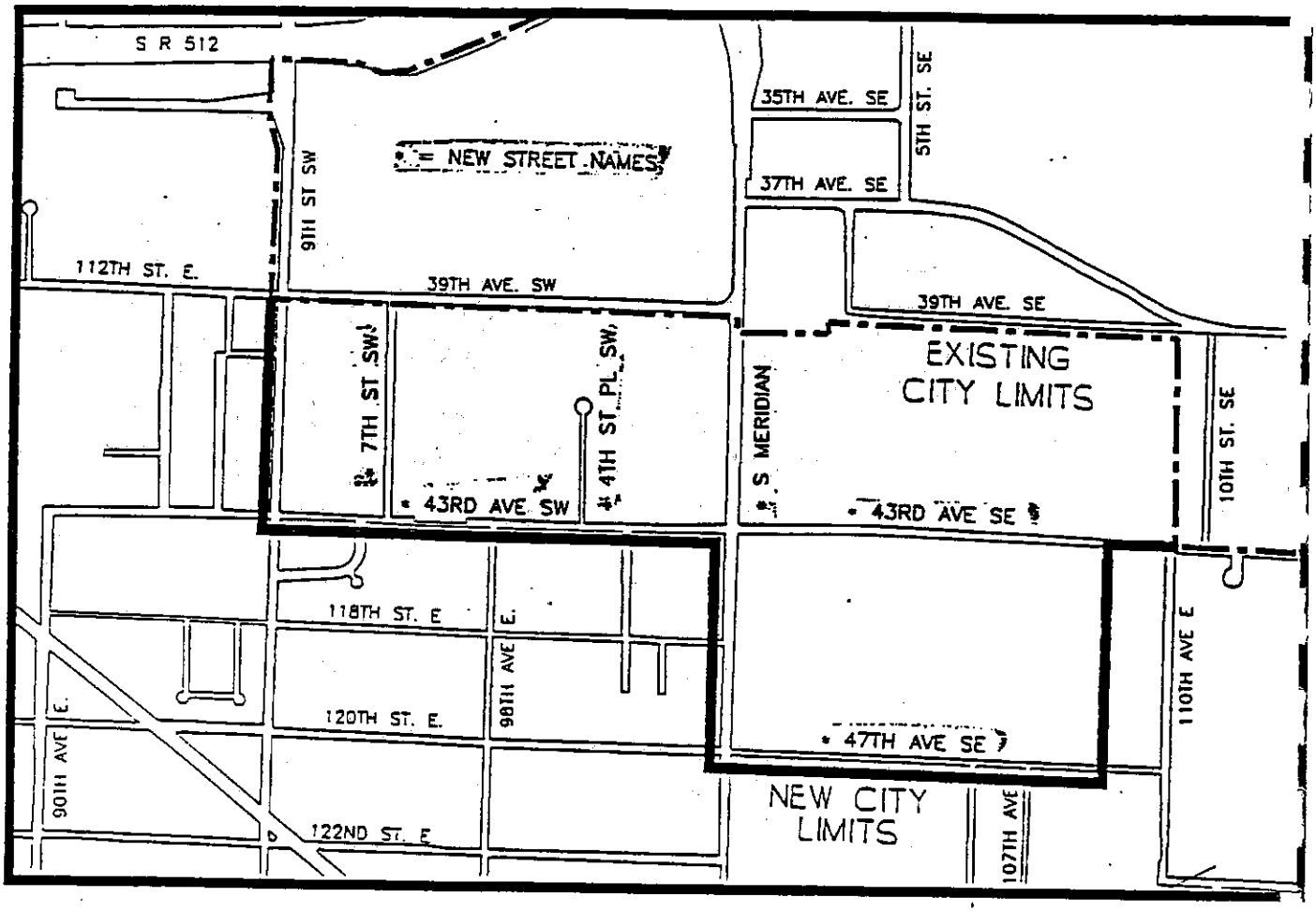
Marlene Ford, P.E.
Traffic Engineer

file: c:\winword\cityproj\sr161-2.doc
xc: Tom Heinecke, Director of Public Works

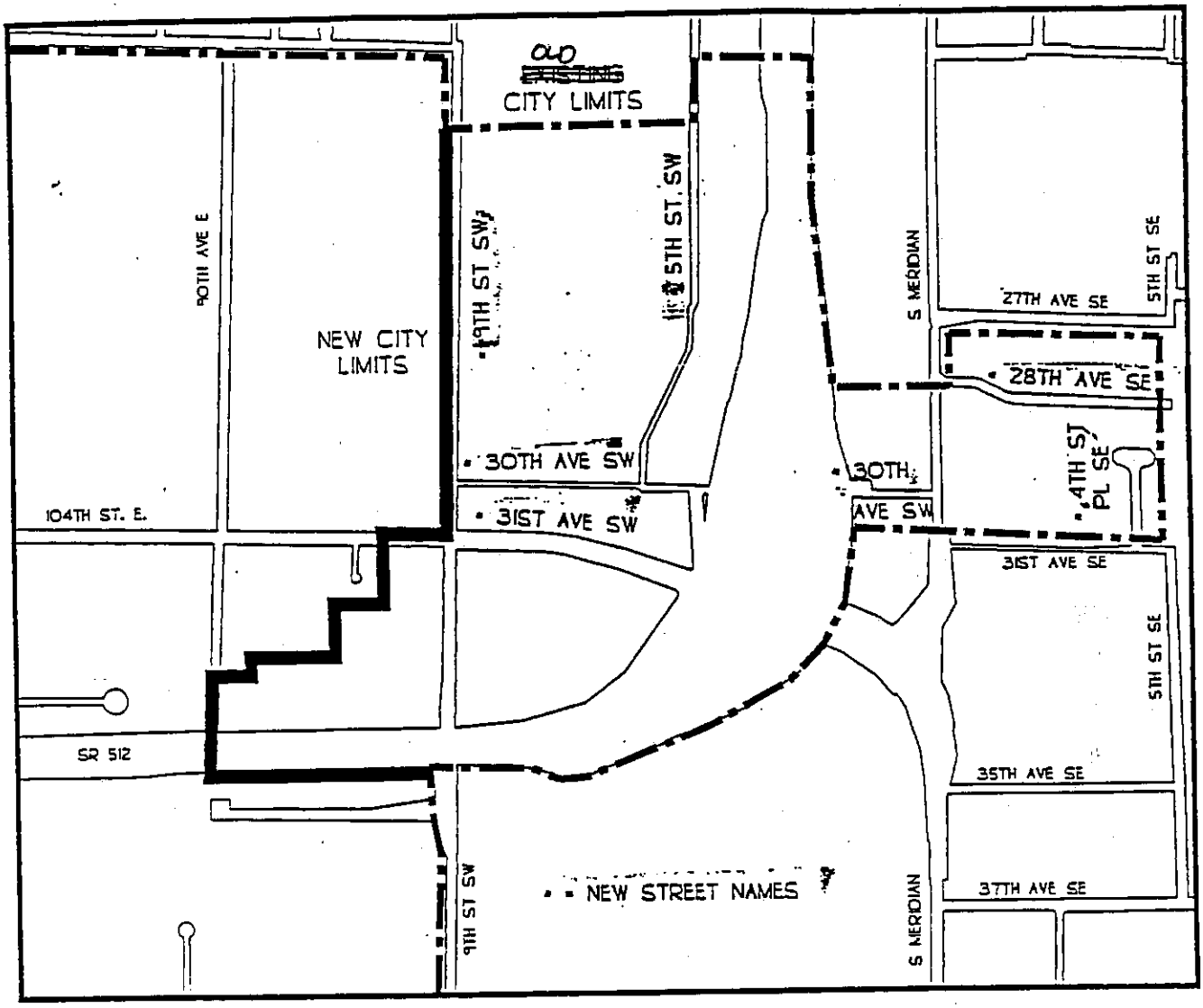
ANNEXATION AREAS - 1994 & 1995.

W/ NEW STREET NAMES




S R 512
* = NEW STREET NAMES
35TH AVE. SE
5TH ST. SE
37TH AVE. SE
91ST ST SW
112TH ST. E.
39TH AVE. SW
39TH AVE. SE
7TH ST SW
41ST ST PL SW
EXISTING
CITY LIMITS
S MERIDIAN
101ST ST. SE
43RD AVE SW
43RD AVE SE
118TH ST. E
98TH AVE E.
120TH ST. E.
110TH AVE E
90TH AVE E.
47TH AVE SE
NEW CITY
LIMITS
122ND ST. E
107TH AVE

Area #1


CITY LIMITS
NEW CITY LIMITS
90TH AVE E
104TH ST. E.
SR 512
19TH ST SW
15TH ST SW
30TH AVE SW
31ST AVE SW
S MERIDIAN
27TH AVE SE
5TH ST SE
28TH AVE SE
30TH AVE SW
4TH ST PL SE
31ST AVE SE
5TH ST SE
35TH AVE SE
37TH AVE SE
9TH ST SW
NEW STREET NAMES
S MERIDIAN

Area #2

Washington State Department of Transportation
Sid Morrison
Secretary of Transportation

Olympic Region Headquarters
5720 Capitol Boulevard, Tumwater
P.O. Box 47440
Olympia, WA 98504-7440

(360) 357-2600
Fax (360) 357-2601

October 28, 1996

Mr. Stephen L. Anderson
City Manager, City of Edgewood
10319-8th Street East
Edgewood, WA 98372

Dear Mr. Anderson:

Region Administrator Gary Demich has asked me to respond directly to your letter of October 15, 1996, regarding the State Route (SR) 161 draft Route Development Plan (RDP). As Transportation Planning Manager for the Olympic Region, the work relating to the RDP falls within my area of responsibility.

Let me begin by assuring you that a copy of your letter will be included in the final documentation. We will also address your comments within the RDP, per the following discussion of each:

1) Scope

We will continue to work through the various issues with our Northwest Region, and modify the RDP according to any mutual conclusions regarding the Pierce County portion. We will also verify that they have your letter which recommends that WSDOT provide Route Development Planning to Federal Way.

2) Impact on Edgewood

All mapping and references will be reviewed and revised based on your comments.

It will be noted in the RDP that the City of Edgewood has for the past six months been involved in the process of revising their interim zoning, and that when their work is completed the related findings can be incorporated into Local Comprehensive Plans, Regional Transportation Plans and models, future updates of the State Highway Systems Plan, and future updates of the SR 161 RDP.

We will also note that environmental impacts, including those affecting the City of Edgewood, will be analyzed, evaluated, and documented in detail during project development stages on SR 161.

3) Regional Importance of Completing SR 167

The City of Edgewood's continuing support for the extension of SR 167 from Puyallup to Tacoma will be acknowledged in the RDP. It will be stated that this is one of the Olympic Region's top priorities, and that the supportive efforts to bring the project forward by the City of Edgewood, the Port of Tacoma, and Pierce County, in particular, will carry significant meaning in upcoming legislative sessions. We will also state the regional consensus that the extension of SR 167 will not solve the long term congestion problems on SR 161, and therefore, we will continue to move forward with the necessary design efforts currently underway.

4) Alternatives not Adequately Considered

It will be noted that the City of Edgewood has recommended consideration of non-widening alternatives, such as coordinating traffic signals, moving the traffic signal at Jovita, and completing SR 167. We will also ensure that our design office, where detailed environmental analyses will also be conducted, receives these recommendations.

5) Growth Rates

It will be clearly stated that growth rates for the RDP were applied directly from Pierce County's current travel demand forecast model, which is accepted by the Puget Sound Regional Council, and is consistent with the County's Comprehensive Plans.

6) Bottlenecks

We will provide the City of Edgewood's discussion to both our Olympic Region and Northwest Region design offices for their use.

7) Level of Service Standards (LOS)

The City of Edgewood's discussion of LOS issues will be provided to our design office for their consideration, as detailed LOS analyses will be conducted during engineering design work.

8) Public Opinion Polls

We would like to reaffirm our generic concerns that any preview of a public opinion survey by stakeholders in the area being surveyed can cause statistically significant risk to the integrity of the survey results, and we apologize for any inappropriate assurances on our part that a preview would have been provided.

Our consultant for the SR 161 RDP surveys, Pacific Rim Resources, has an outstanding record and reputation in Washington State for excellence in providing public involvement services and opinion surveys. They employ sound methods and instruments to obtain statistical validity. We would like to clarify that the survey was not intended to address specific impacts to Edgewood alone, but was intended to address the regional mobility needs specific to SR 161. In general, the findings reaffirm the conclusions of the Puget Sound area's Regional Plans and Programs.

Again, we recognize the challenge that Edgewood feels as a newly formed City, especially when a regional route (SR 161) is your main transportation facility. It is our charge to address both regional and local impact and function for this important facility--as we have done with the SR 161 RDP. We encourage your involvement with the Puget Sound Regional Council (PSRC) as that is Puget Sound region's accepted forum to present your issues and concepts regarding SR 161 for incorporation into the Regional Transportation Plan and Transportation Improvement Programs. Inclusion in these PSRC documents is required for all transportation improvement projects.

The RDP process included more than a year of effort with involvement from the jurisdictions that border SR 161, and it is currently in final draft form. We will conclude the process for the time being on SR 161 as we complete and distribute that final draft, including revisions as noted above, within the next few weeks. Please be assured that as those jurisdictions along SR 161 complete and update their land use and transportation models and plans, and as other changes occur along the route, we will make updates to the RDP accordingly as our budget and time allow.

Thank you for being involved in the RDP process, and for supplying comments that will improve the draft RDP. We encourage your continued communication with our design offices, for details and input on the projects currently underway. If you have further questions or comments, please contact Chris Schroedel of my staff at (360) 357-2763.

Sincerely,

Robert E. Jones
Transportation Planning Manager

cc: Senator Calvin Goings
Representative Grant Pelesky
Representative Sarah Cassada
Sid Morrison

City of Edgewood

October 15, 1996

Mr. Gary Demich
Washington State Department of Transportation
Olympic Region Headquarters
P.O. Box 47440
Olympia, WA 98504-7440

Dear Gary:

Thank you for the opportunity to review and comment on the draft route development plan (RDP) for State Route 161. We view this as an extremely important planning tool and trust that you will incorporate our comments into the final plan. For the ease of reference, we have numbered our comments.

1) Scope

We concur that the RDP should outline a vision for the future development of State Route 161. Unfortunately, the scope of the plan precludes that, as it only addresses a portion of the route falling within the Olympic Region. The plan must be extended all the way to the intersection of SR 18 in Federal Way in order to include the full route. This is extremely important given that the Northwest Region has assumed planning and management responsibility for proposed improvements extending into Edgewood. Without a single coordinated and comprehensive plan, we will be presented with disjointed planning and no clear direction. Our concerns are compounded by the apparent lack of communication and different perspectives between the two regions. For instance, the Northwest Region has said that realigning Jovita Boulevard is not feasible because of the impact on the Albertsons site. This does not appear to be consistent with statements made by the Olympic Region.

In order to be an effective planning tool, the scope of the RDP must be extended, and a single, uniform plan prepared.

10319 8th St. East • Edgewood, WA 98372 • Phone: (206) 952-3299
FAX: 952-3537 • Internet Address: 103323.333@Compuserve.com

2) Impact on Edgewood

In general terms, the plan seems to understate or not fully recognize the impact that SR 161 has on the City of Edgewood. This is evidenced in small ways, such as the omission of the City from some of the maps, to the inaccurate reference of the State Route traveling through the City of Milton. More importantly, the discussion of the character of travel (Section 2.2 page 10) does not accurately represent prospective development in Edgewood. This misrepresentation is continued in Section 3.5 Terrain and Road Side Character (page 24), as the roadside classification table does not even include Edgewood.

Section 4.4 Land Use and Zoning properly recognizes the important role that comprehensive planning and zoning play in the development process, and notes that Edgewood is currently in the process of preparing a comprehensive plan. It fails to take into account, however, that the City has for the past six months been involved in the process of revising our interim zoning. We are near completion of this process and all tables and analysis should be adjusted to accurately reflect the City's new interim zoning. The RDP also fails to recognize the impact that SR 161 currently has on the City of Edgewood and the devastating affect that the expansion would have on our community. These issues must be addressed up front, not after the fact.

3. Regional Importance of Completing SR 167

While the focus of the RDP is SR 161, a meaningful plan cannot be developed without taking into account all regional needs and priorities. The importance of completing SR 167 and the impact that its completion would have on the need to widen SR 161 is understated. For instance, there is no reference to SR 167 in Section 2.3 The Local Urban Network and Related Facilities (pages 10 and 11). It is also missing from some of the maps.

The traffic analysis also overlooks where the vast majority of the trips on SR 161 are generated, Puyallup and points south, and fails to recognize the impact that completing SR 167 would have on traffic levels on SR 161.

4. Alternatives not Adequately Considered

The RDP seems to be based on the premise that growth is inevitable and that the only way to deal with it is to widen the road. There is no clear evidence that widening the roadway will be effective. Furthermore, no consideration is given to alternatives, such as coordinating traffic signals, moving the traffic signal at Jovita, and completing SR 167. Sound planning and SEPA both require a thorough analysis of alternatives.

5. Growth Rates

Apparently, annual traffic growth rates ranging from .88% to 5.80%, compounded annually, were utilized in the modeling used to support the plan. It is not clear how these rates were derived, what assumptions they're based on, and whether they are consistent with local government's comprehensive plans.

6. Bottlenecks

The Northwest Region has indicated that moving the stoplight at the Jovita intersection is not feasible. Failure to do so will leave a bottleneck that will negate any other improvements on this route. Furthermore, the uncertain timeframe for addressing the bottleneck coming up the hill from Puyallup further calls into question the wisdom of expanding SR 161 through Edgewood. In other words, it just doesn't make sense to start in the middle of the route.

7. Level of Services Standards (LOS)

It is not clear how the LOS were established. Furthermore, the reality of achieving the projected LOS improvements must be questioned. For instance, on page 45 a B level service is projected for the North Hill despite acknowledgments that the proposed improvements are very expensive and may not rate well in the Departments cost benefit analysis. It also raises into question whether the projected LOS at other intersections can be achieved if a segment such as improving North Hill does not occur. Similar questions can be raised regarding the proposed realignment of Jovita.

8. Public Opinion Polls

During the preparation of the route development plan, the City asked for the opportunity to preview the survey instrument and the distribution strategy. The basis for this request was to help assure the reliability of the questions and the soundness of the methodology. Despite assurances that we would be afforded this opportunity we were not. We take exception to the explanation provided by a member of your staff that doing so would have compromised the integrity of the survey. Rather, the survey was poorly constructed and there is reason to doubt its statistical validity. The questions are biased, requiring forced choices and there is no context to the questions. For instance, would respondents support an increase in their gas taxes to pay for these improvements? As a result, we believe that this section should be deleted from the plan and the planning process.

In summary, we believe that the region will be well served by a comprehensive route development plan that fully considers regional needs, priorities and alternatives. The draft plan falls short of this and, as a result, requires additional work. We look forward to reconvening the steering committee and the completion of a true comprehensive plan for State Route 161.

If you have any questions on this or related matters, please don't hesitate to contact myself or Gregg Dohrn at (206)952-3299.

Sincerely,

Stephen L. Anderson
City Manager

/rll

cc: Sid Morrison
WSDOT Northwest Region
Senator Calvin Goings
Representative Grant Pelesky
Edgewood City Council

1000 LAUREL STREET
MILTON, WASHINGTON 98354-8852
FAX (206) 922-2385

October 7, 1996

Gary Farnsworth
Assistant Transportation Planning Manager
Washington State Department of Transportation
Olympic Region Headquarters
P O Box 47440
Olympia, WA 98504-7440

Re: SR 161 Draft Route Development Plan

Dear Gary:

Thank you for the opportunity to review and comment on the SR 161 Draft Route Development Plan from the Graham Vicinity to the King County Line. There is always a question of how accurately local elected officials represent the position of the general population and the business community. We were pleased to see that the significant majority of citizens and business recognize and confirm that SR 161 performance has deteriorated in recent years, and has every prospect to deteriorate even further if no improvements are implemented soon.

The City of Milton has been a strong supporter of improvements on SR 161, since the Northwest Regional Headquarters initiated the SR 161 Widening Jovita Boulevard to SR 18 in early 1993. We believe this project is critical in improving capacity to provide for better traffic circulation and safety by reducing traffic accidents. Completion of this phase of improvement on SR 161 could serve to only increase the problems south of Jovita Boulevard if the Olympic Region project does not proceed as soon as possible.

This should not be interpreted to mean that the City of Milton is opposed to the completion of SR 167, but it simply does not seem prudent to hold up small projects, hoping for funds to be available for a major project. The SR 161 improvement from the Graham Vicinity to Jovita Boulevard estimated unfunded cost appears to be under $16 million, whereas the SR 167 has been estimated $205 to $225 million. With the uncertainty of major funding today, we believe it is important to do those projects that have a high priority and can be funded. We believe this project meets these requirements.

We would urge you to proceed as soon as possible to encumber any additional required right-of-way, before further commercial strip development occurs and the property becomes more expensive to acquire. The additional lane width requirement is already mandatory, and further improvements should be anticipated in the future. In order to comply with Growth Management Act requirements, the City of Milton will grow by approximately 2,500 people and I expect the City of Edgewood will be required to grow by approximately 10,000 people by the year 2017. This local growth will certainly add to the current traffic volumes on SR 161, not on SR 167.

Pierce County and the Pierce County cities and towns are currently working on new population disaggregation figures for the year 2017, and this should be completed by the end of the year. Completion of this project may provide some refinement to current projections of future traffic volumes.

Please let me know if we may provide additional information or support for this project.

Thank you.

Sincerely,

Leonard E. Sanderson
Mayor

cc: Councilmembers
Mark Burlingame, Public Works Director
file

misc/1028/19-17/d04-04//96-088//d

1000 LAUREL STREET
MILTON, WASHINGTON 98354-8852
FAX (206) 922-2385

August 7, 1996

Gary Farnsworth
Assistant Transportation Planning Manager
Washington State Department of Transportation
Olympic Region Headquarters
P O Box 47440
Olympia, WA 98504-7440

Re: SR 161 Route Development Plan

Dear Gary:

The Milton City Council reviewed the status of projects on SR 161 at their meeting on August 5, 1996. The Northwest Region is now entering the design phase of the improvement from SR 18 to Milton Way. We understand they could be in the construction phase as early as 1998. They are now looking at several options to realign Jovita Boulevard to the North of the present intersection.

We believe these improvements will not only provide for the more efficient movement of vehicular traffic, but will also provide safety improvements with the left turn lanes at critical points. The signalization at 28th Avenue East will be a major improvement of a very dangerous intersection. It should also encourage more north bound vehicles to enter SR 161 at 28th Avenue East, rather than going to Milton Way to enter with the protection of the existing signalization.

The City Council was very concerned that the Northwest Region project could be completed and the Olympic District project from Milton Way to 36th Street East is not completed. Moving traffic south more quickly to Milton Way, without improving the remainder of the route to SR 167, SR 512 and Puyallup, can only lead to more critical traffic problems on North Hill.

The Milton City Council voted to go on record as supporting the lane capacity expansion of SR 161 from Milton Way to 36th Street East. We believe this project should be scheduled for completion at the earliest practical date.

Thank you for the opportunity to participate in the Steering Committee. Please let me know when we may be of additional assistance in this project.

Sincerely,

Leonard E. Sanderson
Mayor

cc: file

misc/967/19-1/d04-04//d

1000 LAUREL STREET
MILTON, WASHINGTON 98354-8852
FAX (206) 922-2385

August 7, 1996

Gary Farnsworth
Assistant Transportation Planning Manager
Washington State Department of Transportation
Olympic Region Headquarters
P O Box 47440
Olympia, WA 98504-7440

Re: SR 161 Route Development Plan

Dear Gary:

I recently became aware of a letter dated April 25, 1996 from Pierce County Fire District No. 8 to Chuck Hornbuckle, Traffic Engineer, WSDOT, a copy of which is attached. The letter expresses a very valid concern for providing adequate water for fire protection purposes.

The problem of being required to lay fire hose across SR 161 already exists, since the primary water supply and hydrants are on the East side. Sending traffic to alternate routes should not significantly increase the potential for accidents. The probability of a fire on the West side of SR 161 is very low, and therefore should occur very infrequently.

The request to allocate scarce highway funds to install a new 12 in water main on the West side of SR 161 is not reasonable. This should be the responsibility of the local service provider or the adjacent properties to be served. The spacing of hydrants appears to be excessive at 350 feet. Most fire hydrants are installed at 600 foot intervals. It should not be the objective of highway funds to decrease fire insurance rates.

Sincerely,

Leonard E. Sanderson
Mayor

cc: Lee Samalka, PCFPD # 8 Manager
Mt. View-Edgewood Water Company.
file

misc/968/41-26/19-1/d04-04//d

CITY OF EDGEWOOD
10319 8TH STREET E.
EDGEWOOD, WA 98372
PH 206-952-3299 FAX 206-952-3537

May 24, 1996

Gary Demich
Regional Administrator
Olympic Region Headquarters
Washington State Department of Transportation
5720 Capital Boulevard
P. O. Box 47440
Olympia, WA 98504-7440

Dear Mr. Demich,

On behalf of the citizens and City Councilmembers of Edgewood, please accept my sincere thank you for attending last night's City council meeting and discussing transportation issues and concerns. The discussion was educational for all those in attendance, and especially for the participants.

The City Council's responsibility is to represent the community on matters of local and regional significance: the potential widening of SR 161 is overwhelmingly significant. Such an action will result in changing the character of our community forever. Our land use decision capability aside, the widening will be a divisive action that will unravel the sense of community identity we are trying so desperately to attain.

The intent of the meeting was to place our objections on the table, try to convince you to rethink the DOT position on SR 161 and SR 167, and halt activities on the potential widening of SR 161 until such time as alternative methods for capacity, safety and access could be more thoroughly addressed. Thank you for patiently listening to our concerns and responding to those concerns in a polite and highly professional manner.

We oftentimes find it easy to criticize the faceless bureaucrat; your conduct at our meeting will make it harder for us in the future. Again, thank you for attending our meeting and providing us the valuable information you were able to provide. City Council and staff look forward to continuing a positive working relationship.

Sincerely,

T. D. Faherty, Mayor

c: City Councilmembers
Representative Grant Pelesky

CITY OF EDGEWOOD
10319 8TH STREET E.
EDGEWOOD, WA 98372
PH 206-952-3299

April 12, 1996

Gary F. Demich
Olympic Regional Administrator
5720 Capital Blvd., Tumwater
Olympia, WA 47440

Dear Mr. Demich,

We have received your letter dated April 8, 1996, and appreciate you responding to our concerns about the route development plan for SR 161 as it effects the City of Edgewood. While we appreciate your candor, we do not agree with the substance of your letter and urge you to reconsider the process for determining the best alternative for improving SR 161 to address safety, access and mobility through our city.

The City Council strongly believes the completion of SR 167 is of utmost importance to both our city and the region. We encourage the DOT to aggressively pursue the completion of SR 167 before undertaking design and construction of SR 161 from 36th Street to 8th Street. Doing the opposite provides little incentive for vehicles from the south to locate alternate routes and thereby compounds the safety, mobility and access problems currently being experienced in our community.

We have been informed by your staff that the moneys identified for designing the widening of SR 161 must be expended prior to June 30, 1997. We interpret this statement to mean the route development plan has already been made without benefit of our community's input. Further, your letter states the foregone conclusion of the problem with SR 161 is capacity and nothing can resolve the problem except by widening the existing three lane roadway; however, you encourage us to provide you our thoughts on access problems as though this opportunity for input will somehow satisfy your perception of participation in a public process. The fundamental issue becomes one of a lack of integrity in the supposedly participative process for route plan development as the solution to the problem has been predetermined.

Our request is twofold. First, we request that the route development planning be extended six months and all design work suspended. During this period, we propose that a portion of the design funds be reallocated to hire an engineering firm to assist our community and the State in evaluating our options for meeting our transportation needs. Second, we will engage in a concentrated effort with our legislative delegation and neighboring communities to promote the completion of SR 167 as the next logical road development

project for assisting in alleviating the regional traffic problem. Our legislative delegation will also be requested, if necessary, to support and sponsor extension of the design funding past June 30, 1997. We are planning for the next 20 years; a six month moratorium does not seem to be too much to ask after waiting this long to do something about SR 161 in Edgewood. We contend there are other feasible and perhaps less costly solutions to this traffic problem.

For example, your staff has informed us traffic signals are the controlling factor in determining level of service. A complete survey has not been conducted and it is assumed conditions are poor now and traffic signals would operate at level of service F in 2016. Your Department figures indicate 75% of the volume on Meridian comes from the valley up to 36th Street and the remaining 25% exits Edgewood at the Pierce/King County line. It seems clear to us that completing the traffic signal analysis and modeling of traffic flows prior to deciding on any one alternative is in everyone's best interest.

You are cordially invited to our City Council meeting on Wednesday, April 24, 7:00PM, at Fire Station # 8, 24th and Meridian, to continue discussion on this matter of extreme importance to our community. A two-way conversation could improve understanding of the issues facing both parties involved in this important regional issue. Please, contact our city manager, Stephen L. Anderson, to let him know if the 24th is convenient or if other arrangements need to be made.

Sincerely,

T D Faherty, Mayor

c City Councilmembers
Representative Grant Pelesky

PIERCE COUNTY FIRE DISTRICT 8
10105 - 24th Street East
Puyallup, Washington 98371
(206) 927-2313

April 8, 1996

Mr. Steve Anderson, City Manager
City of Edgewood
10319 8th St E
Edgewood, Wa. 98371

Dear Mr. Anderson,

I am writing regarding the Washington State Department of Transportation plan for State Route 161 from 8th St E to 36 St E.

Pierce County Fire District 8 is opposed to the WSDOT design option to install a raised median or other barrier along State Route 161, from 8th St E to 36th St E.

Installation of a raised median would seriously limit access by emergency vehicles to occupancies along State Route 161 in the case of a fire or emergency.

The raised median barrier would prohibit access to water supplies for firefighting purposes. A planter strip median would not support nor allow the passing of fire apparatus and other emergency vehicles.

Our ISO rating would be compromised because of the barrier to access firefighting water supplies along the length of SR 161. This is the primary commercial district of the city. The ISO rating is based heavily on water supply and access to commercial occupancies. A downward change in our ISO rating would have a severe negative economic impact to the business property owner and the resident homeowners of the City of Edgewood and Pierce County Fire District 8.

Pierce County Fire District 8 is opposed to any type of continual barricade, divider or raised median that would limit access to occupancies along SR 161 in the project area.

Sincerely,

Dale T. Mitchell

Dale Mitchell, Chairman
Board of Fire Commissioners

cc: Terry Faherty, City of Edgewood Mayor
District Manager
Chief
File

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